

MANUFACTURERS' RECORD.

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Manufacturers' Record.

RICHARD M. EDMONDS, President.
THOMAS F. GRASTY, Vice-President.

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COPY FOR ADVERTISEMENTS.

Advertising copy (changes or new advertisements) should reach us Saturday Morning to insure insertion in the issue of the following week.

For the first issue in the month we should receive copy by Friday Morning of the week preceding.

SATISFACTION.

In a letter to the Manufacturers' Record President R. E. Pettus of the Chamber of Commerce of Huntsville, Ala., writes as follows:

We congratulate you for the telling work you have accomplished in the development of the resources of one of the most wonderful sections of this great country of ours, and especially for your wise and earnest efforts in behalf of the poor white children of the South, which are finding so many responsive echoes and amens in the hearts of our patriotic people. The Manufacturers' Record is as much to our liking as it could be if our Chamber of Commerce owned and edited it; for there are so many points of contact along the lines you are working and the many phases of the work we have undertaken, chiefly among which are the development of the raw material of this section, the education and elevation of the masses of the people, and the providing of regular and paying employment for all of them as nearly all the time as possible. As a means of conveying the best thought, and as a reliable medium through which to advertise our resources, the Manufacturers' Record is incomparable. Its years of uniform regard for the true and genuine have intrenched it in the confidence of its readers in such a manner that it is no disparagement to other industrial journals to say that it stands today without a peer in the field in which it operates.

May its usefulness and influence increase as the years go by, and may He who has made all people and all things for their joy and comfort give Mr. Edmonds that wisdom that He would have imparted to them for their information, edification and future happiness.

A DANGEROUS WEAPON.

There are indications that the "logic of statistics" which was unsuccessfully applied to the exploitation of the Southern Education scheme is being applied to the problem of employment of children in Southern cotton mills. Statistics is a young science, and is a weapon which should be handled very carefully. It is frequently loaded at both ends, and in the hands of the inexpert who imagines that statistics is the science of handling figures in support of a theory, no matter how hysterical, is likely to do more damage to the handler than to the persons at whom it is aimed. A word to the wise ought to be sufficient.

PROSPERITY AND THE SOUTH.

The phenomenal activity in business, which some anticipated would be checked last year by the greatest shortage ever known in the corn crop, seems this year destined to be still further augmented by the largest corn crop ever produced, and to this great corn yield will be added a large wheat crop, even if the final outturn be a little less than last year. The average production of corn from 1895 to 1900 was a little over 2,000,000,000 bushels a year, but in 1901 the crop was cut short by the hot winds and the drought to 1,500,000,000 bushels. The indications for the present crop as reported by the Department of Agriculture point to a yield of nearly 2,600,000,000 bushels, or over 1,000,000,000 bushels in excess of last year's production, and 300,000,000 bushels more than the largest crop ever before produced, that of 1896.

The indications for the wheat crop are for a yield of 650,000,000 bushels, and though this is less than the crop of last year, which was the largest ever produced, it is the largest crop ever grown, with the exception of that of 1901 and of 1898, exceeding the average yield of recent years by approximately 100,000,000 bushels. Some experts, however, estimate this year's yield at over 700,000,000 bushels.

In the aggregate the grain crop of the country will probably be much the largest ever produced, and the abundant rains throughout the greater part of the country assure large production of other crops. In the South the corn crop will probably be cut short to some extent, but the cotton crop will probably more than make up for this, and added to the promise of a fine cotton crop will be an abundant yield of fruits and vegetables.

From all parts of the country there come reports of greater prosperity among the agricultural interests than has been known for many years. The high price of foodstuffs, against which consumers have protested, have yielded to the farmers and cattle-raisers profits to which they had been strangers for many years.

The railroads of the whole country are burdened with traffic beyond their ability to handle. Locomotive and car works are rushed with orders for rolling stock which will tax them for the next year or more. Rail mills already have the assurance of a demand which will equal, if not exceed, their greatest possible output in 1903. Manufacturers of all lines of iron and steel goods, makers of machinery and kindred interests, the pig-iron producer and the coal operator are rejoicing in a period of unprecedented activity and prosperity. So marvelously great has been the sweep of this industrial and railroad activity, so great the expansion of our trade interests, that we are constantly forced to wonder how long such a period of activity can continue, and yet the tremendous increase in business, in wealth and in consuming

power of our country has carried this prosperity far beyond what anyone would have dared a few years ago to predict.

Storms may come and disasters may temporarily overtake us, but at present there seems to be no sign of a cloud upon the business horizon. It is a matter of congratulation that the South is moving forward in this period of prosperity as never before. The world now recognizes as never in the past that this section is to be the scene of the greatest business and industrial activity, and that what we have done is only a faint indication of what is ahead of us.

DISCOURAGING OPTIMISM.

In his speech last week at Chautauqua Senator Hanna, discussing the relations of labor and capital, uttered quite a number of truisms. One of them is that organization of capital has come to stay, just as organized labor has come to stay, and for the same reason, that it is necessary. Others bore upon the operations of the Golden Rule as emphasized in the aspirations of the Civic Federation. There was, however, something of obscurity about his sentence, "We must forget the idea that there are any classes in our government; we must forget that there is any difference between the man who labors with his hands and the man who labors with his brain." If by "government" Senator Hanna meant "the country," he suggested an impossibility, and an impossibility of assured permanency just as long as such speeches as his are made and such organizations as the Civic Federation are active. They only tend to confirm the public consciousness of distinct classes in the country, and distinct classes embracing only a small proportion of the population. As at present understood, these two classes differ radically. The one is organized upon the principle of economic production; the other acts upon the uneconomic fallacy of overproduction. Both are at times in error in seeking to balk the operations of economic law. The one acts toward the survival of the fittest, without a sharp definition of fittest; the other inclines towards maintaining, if not propagating, unfitness. Without a radical change somewhere efforts of the two forms of organization to act in harmony can result only in embarrassment and suffering for the mass of people in the country. In the Civic Federation the two names which have been given most prominence are those of Senator Hanna, representing organized capital, and of Mr. John Mitchell, representing organized labor. Their approachment in the matter of the anthracite coal situation is certainly not encouraging to the millions of consumers of coal, whether they are capitalists or laborers in the broader sense.

Advertisements of Southern localities offering special advantages for the location of manufacturing enterprises will be found on pages 54 and 55.

SUGGESTIONS FOR SOPHISTS.

The New York Times, referring to the close of the Summer School of the South at Knoxville as a text for an editorial bearing upon the latest Southern Education movement shows that it is not well informed about the position of opponents to that movement. It says:

The slight tendency to criticism—it could not be called opposition—manifested in the South toward the work of the Southern Education Board appears pretty much to have disappeared. What there was of it was due, we think, mainly to misunderstanding, or failure to understand, the purpose and methods of the board. This has been dispelled as the work has proceeded, and the organization has begun to show direct activity.

The Times says further that what little indication of disapproval of the scheme there was in the South rose from an interpretation of the expression, "in favor of a public-school system, State supported and State directed, in which every child may have the open door of opportunity," and it adds:

The reasoning that was used seems to have been something like this: "The open door of opportunity" is to be "for every child." That means black and white alike, and the next step will be to mixed schools, and so to social equality. Of course, the interpretation is strained. It is the opinion of these Southern teachers that all children should have the opportunity for schooling, but not necessarily for the same schooling, and not at all necessarily for schooling in the same classes.

Of course, the reasoning sketched by the New York Times is a strained interpretation of the expression which it quotes. But unfortunately the New York Times falls into the sophistry to which more than one of the defenders of the Southern Education scheme have consciously or unconsciously committed themselves—the sophistry of presenting an illogical argument based upon a straw proposition, crediting it without the slightest justification to opponents of the scheme, and then with a grand flourish proceeding to refute it.

It is rather a waste of time to attempt to rectify such a state of mind. It carries with it its own condemnation. Still, for the benefit of individuals who might be misled by a superficial reading of such statements as those of the New York Times, a few words may not be out of place.

Opposition in the South to the scheme of the Southern Education Board as noted and voiced in the Manufacturers' Record has not been and is not opposition to a public-school system "in which every child may have the open door of opportunity." It has, though, been and is opposition to the malformation and maladministration of the public-school system unfitting children to take advantage of opportunity.

The question of the relations of the white and negro races in the scheme of education was at first of secondary importance in the opposition. It was forced to the front when active workers for the scheme or its supporters began to emphasize such ideas as education "without distinction of race, sex

or creed," disregarding "the color line" and the favoring of "the same training for the blacks as for the whites," to say nothing of the expectation that mixed schools were only a question of time or of the antecedents in education of some of the promoters of the scheme. We do not believe that one in ten of the active workers in the South would acknowledge now that he favors anything looking to admixture of races in the schools, however strongly he may be convinced of the wisdom of making no distinction in the kind of training to be offered. Nor do we believe that the phraseology employed by some of the promoters, and capable of two interpretations, was intended to be interpreted the same way in the South as in the North. For that reason we have condemned it as containing the germs of evil, not the least of which might be a cultivation in the South of carelessness about the verities of the negro problem, not unlike the carelessness which has been manifested in the use of figures, mis-called statistics, and of unreasoning, mis-called logic, in the promotion of the scheme.

The fundamental objection to the undertaking, in spite of divers plausible utterances and acts, was the danger that local initiative for the support of public schools might be sapped, and thereby that a community should lose one of the principal educational advantages of a public-school system, the education in independence. That point has apparently escaped the attention of the New York Times. It is a vital one. It strikes right at the heart of the public-school question, and consequently of the education of the South. The menace is well set forth by the New York Tribune, which, referring to another Southern movement, says:

The habit of subserviency once formed is not to be shaken off without a struggle, and some fanciful plea of expediency, some vision of temporary advantage, is as likely as ever to dominate.

AFRICAN COTTON.

Under date of August 1 there was telegraphed from Philadelphia a story published in one of the local papers to the effect that options had been obtained on 50,000 square miles in the "cotton zone" of Africa, where cotton plantations would be established to meet the competition of the South. The story went on to say that certain great financiers of England interested in South Africa were connected with this scheme, which, it was predicted, was of such gigantic proportions as to threaten the supremacy of the United States as a producer of the staple. The names of Lord Kitchener and Earl Roberts are also linked with the scheme. On its face the story was a dream, and it was denied within forty-eight hours after its first publication. That the growing of cotton in Africa may be extended is a possibility. That its extension shall threaten the supremacy of the United States is a very distant contingency, and an utter impossibility should the cotton-grower of America adopt more generally the policy of increasing the production of the staple per acre along with the natural increase of acreage devoted to the crop.

PIG-IRON.

The total production of pig-iron in the United States during the first six months of this year, according to statistics of the American Iron and Steel Association, amounted to 8,808,574 tons, an increase over the same period in 1901 of 1,133,961 tons. The produc-

tion of the Southern States compared with the production in the same period in 1901 was as follows:

States.	1901.	1902.
Alabama.....	627,214	700,546
Virginia.....	217,819	263,233
Tennessee.....	178,244	187,359
Maryland.....	157,628	148,619
West Virginia.....	74,630	93,297
Kentucky.....	26,361	51,089
N. Carolina and Georgia.....	15,547	12,401
Texas.....	1,330	1,528
Total.....	1,298,763	1,458,072

The rate of advance in the whole country was 14.7 per cent., and in the South 12.2 per cent.

THE MEMPHIS PICTURE.

R. L. McKellar, assistant general freight agent, Southern Railway, writing from Memphis, Tenn., to the Manufacturers' Record, says:

As one of the many Memphis readers and admirers of the Manufacturers' Record, I wish to thank you very cordially for the special article as well as the editorial that appears in your issue of the 7th inst. in regard to the past, present and future of our city.

Technical Training.

(Houston Daily Post.)

The recent address on the subject of the technical education in the South delivered before the Georgia School of Technology by Mr. Richard H. Edmonds, the editor of the Baltimore Manufacturers' Record, has attracted widespread attention. The Post recently commented on it editorially, and so has nearly every Southern newspaper in nearly every Southern city of importance, thus showing the deep interest that prevails in the South in this subject.

Mr. Edmonds' appeal to the South to train its youth to do things, to use the schools as the factories which "shall turn out the most priceless product known to mankind—men and women equipped by training to develop every latent power to their own happiness and the blessing of their country," has met with an enthusiastic indorsement in every Southern State.

And not only in the South is the excellence of this advice recognized. New England, which is the oldest manufacturing section of this country, realizes that the South is on the right track and likely to prove a dangerous industrial rival. "There is this to say from the practical side," says the New Bedford (Mass.) Evening Standard, commenting on Mr. Edmonds' address, "that if Georgia and the South follow this impulse wisely and perseveringly, and that if Massachusetts and the North do not, they will increase while we will decrease, a consummation of which there is no necessity."

Mr. Edmonds marshals the facts and figures which show the great advances the South is making in manufacturing industry of all kinds. Therefore he pleads for more technical education, that the young men of the South and the boys of the South who are growing to be young men may take part in the development of this industry to their own and their country's advantage. There is no doubt that progress in the South is advancing with seven-leagued boots. From 1880 to 1900 the manufacturing capital in the South increased from \$250,000,000 to \$1,100,000,000. In the city of Houston from 1890 to 1900 the manufacturing capital increased from \$3,509,434 to \$6,925,865, and increase of 97.3 per cent. What has been is as nothing to what will be with the cheapening of fuel from the discovery of oil in Texas, the building of the isthmian canal, and the awakening of the South to industrial and commercial opportunities never before paralleled in the history of the world.

LITTLE ROCK REFLECTING ARKANSAS' PROMISE

[Special Correspondence Manufacturers' Record.]

Little Rock, Ark., August 11.

When you run across a man like J. F. Holden, traffic manager of the Choctaw portion of the Rock Island system, you soon begin to think you have made an error in not moving right into Arkansas and getting hold of some of the good things he so enthusiastically talks about. And the view is rather strengthened than otherwise when you hear some one else remark: "Oh, Holden has a right to be enthusiastic, for he is on half a dozen development enterprises that are very handsome dividend-payers." Mr. Holden says, in brief, that there are so many rich and practically undeveloped resources in Arkansas that the opportunities are fairly bewildering, and he predicts that in timber products, ores, fruit and agriculture, to go no further, the development of the next few years will be such as to astonish the country. Among the instances he gives of the activity now going on is the recent purchase around Malvern by some Wisconsin parties of 81,000 acres of timber land at the price of \$14 an acre, and the erection of a \$300,000 mill plant on the property. Michigan people have also made recent heavy investments in Arkansas timber lands, the value of which is now being recognized to an extent unknown before. He also points out the present interest in the lead and zinc fields of Marion, Newton and Searcy counties, where more money has been invested in mining properties in the last twelve months than for five years before. And in agriculture and horticulture Arkansas has already shown what she can do, her apples being blue-ribbon winners wherever shown, while her melons and berries are held in high esteem in Northern markets now, and their cultivation is increasing all the time.

People away from here have not been disposed to take Arkansas over-seriously, and even yet her condition as mirrored in those who mostly figure in the politics of the State is not overly reassuring, but there is a growing contingent of newcomers, there are promises that some day the habit will be formed of choosing legislatures that will have the best interests of the State at heart, and there certainly is so much of natural wealth in the State that capital will be drawn to it in spite of every discouraging circumstance. And it is exceedingly well for the country at large that Arkansas has been a trifle backward, for now her magnificent forests of hardwood and pine will not be ruthlessly wasted, as were those of Indiana and Ohio, to make a "clearing" for a patch of corn. Giant oaks will not be felled, rolled into a vast heap and burned to get them out of the way, and oak and hickory and walnut trees will not be split up into rails for fences. The hardwoods of Arkansas form one of the largest bodies of such timber left standing in the United States, just because the settler has largely "gone by on the other side," and now, when the people have learned to understand that one big tree may be worth more than the price of a small farm, the wooded wealth of Arkansas will be used in a way to benefit the whole people as well as the owner.

While a large portion of the timber being cut goes out of the State to be worked up, yet industries are increasing which turn out the finished product. For instance, there are several factories here in Little Rock, as well as in other cities of the State, which sell their entire output in one city of the North, St. Louis taking all the doors, sash and blinds, yellow pine and cypress made by one Little Rock factory, and a handle factory also marketing its entire output in St. Louis as well. The

furniture industry is growing, and it is regarded as inevitable that some day there will be one or more Southern centers of furniture making, and that wagons and carriages will be made here instead of in places where there is no raw material.

Little Rock is the largest city in this State of not populous centers, and her enthusiastic citizens do not believe in hiding their light under any bushel. Thus on directory estimates the claim is made of 56,000 people, and a greater growth and a more prosperous condition are alleged than any other Southwestern city enjoys. The United States census of 1900 gave her 38,307, and that was an increase of 25,000 over 1880. The clearings show nearly \$41,000,000 for the year ending June 1, as against \$30,000,000 for the previous year, and cotton receipts—this being an increasingly important cotton-trading center—of 230,130 bales for the year to June 3, compared with but 124,000 bales two years ago. These are some of the conditions which furnish the text for the sermon the Little Rock Board of Trade so fervently preaches, and that there is much development going on here abundant evidence is supplied on every hand.

That the development is general throughout the State facts reported likewise indicate. Fort Smith, with its new railroad and others expected, and with its industrial ambitions now being put in the form of concrete endeavor; Mena, which was made by the Kansas City Southern, with its shops, and where there are important slate quarries; Texarkana, a great railroad center, and the site of numerous furniture factories; Camden, on the Ouachita, a "cotton-belt" town, which, with its pine lumber industries, is a new candidate for prosperous development; Helena, which is doing a large business in various woodworking lines, besides being a good cotton market; Jonesboro, which is a growing mercantile point, and Pine Bluff, a thriving town, with lumber interests as its chief industry—these are among the most important centers reporting a steady and notable improvement. While it is doubtless true that Little Rock, in the percentage of increase, is leading the other cities of the State, yet the development here may be taken as a measure of what is being done elsewhere, and is interesting from that standpoint, as well as from that of a mere record of things accomplished here. George R. Brown, secretary of the Board of Trade, reports this list of new undertakings, many of them of very recent occurrence, and all of them within the year:

The Arkansas Brick & Manufacturing Co., now running with a capacity of 90,000 brick a day, besides doing a large woodworking business, is arranging to increase the brick-making capacity 160,000 a day, and in thirty days will be making all kinds of brick, pressed and stiff and soft clay.

The Rose City Cotton Oil Co., independent of the trust, with capital of \$50,000, all subscribed locally, is erecting a plant.

The St. Louis Compress Co. has bought all the compresses in Little Rock save one, and has consolidated them. The same company has bought the compresses at Pine Bluff, Newport, Paragould and Texarkana, the investment representing a large sum of outside money brought into the State.

Rief & Son have just started a new enterprise for the manufacture of lumber, running a planing mill in connection with it.

The Ferguson Lumber Co. has just put in a department for the manufacture of telephone and telegraph arms.

St. Louis and Fayetteville parties have incorporated the Johnson Lumber Co.

The Ong Chair Co., recently destroyed by fire, has just started up with new machinery and with a greater capacity than before.

The Mechanics' Lumber Co., with a new planing mill, has just begun operations.

Chas. P. Abeles & Co. occupy a three-story and basement building with new machinery throughout, and will engage in woodworking of all descriptions.

Stock is being subscribed to a new cotton mill, which will weave browns. There is only a twine mill in the city now.

The Retail Grocers' Association has just organized an independent ice company, which will furnish ice at a reduction of more than 50 per cent. from the prices charged by owners of present plants.

A State Fair Association has been organized, and will hold the first State fair the first week in November.

The banking and trust companies, whose combined capital amounts to \$1,700,000, have recently made several changes, and some additions have been made. The German National Bank, the largest in the State, is spending \$50,000 for complete new interior furnishings, new vaults, etc. Cornish & England, private bankers, have incorporated as a State bank, with \$110,000 capital. W. D. Worthen & Co., private bankers, have incorporated, with \$100,000 capital. The Mercantile Trust Co. has just started, with \$300,000 capital. The Pulaski Trust Co. has changed its name to the Citizens' Trust Co. and increased its capital. S. T. Johnson & Co., private bankers, have incorporated as the Union Trust Co.

Little Rock also "points with pride" to the help it has given important enterprises. When the Iron Mountain shops burned a year ago the citizens came to the front with a proposition to help build fire-proof shops. This is easily the most important enterprise in the city, an average of 2000 hands being employed and a payroll of \$130,000 a month being carried. So the city gave \$100,000 here, and now the Baring-Cross shops, as they are called, represent an outlay of \$1,000,000, and are so complete and up to date in every respect that visitors from even across the water come to see and study them and give them praise.

Little Rock also donated \$100,000 to secure the Choctaw road, and gave \$30,000 more toward getting the shops. Twenty-five thousand dollars was given the Little Rock, Hot Springs & Western, the new road which gives a direct line to the world-famous Hot Springs, sixty miles distant, and broke up the monopoly so long enjoyed by the "Diamond Joe" line between Malvern and Hot Springs.

There is a project on foot to build a \$300,000 hotel and develop the potash sulphur springs, which have special curative properties for stomach and liver troubles, and which are located between Little Rock and Hot Springs.

While the people of Little Rock do not advertise themselves as having money for all comers, and might, in fact, consider recent donations and assistance as entitling them to a breathing spell of some duration, yet the Board of Trade does propose to assist industries to get factory sites on satisfactory terms, and with good railroad facilities, a navigable river, and coal at from \$1.90 to \$2.25 a ton, it is maintained by the city that industries in many lines must be attracted by these advantages, and those of abundance of raw materials.

One of the newest developments of Arkansas resources is in the way of working the asphaltum fields of Pike county, where are extensive deposits of both liquid and sand asphaltum, pronounced by the government investigators to be a first-class article. A Little Rock company, of

which J. A. Woodson is president, is preparing to market the product, and some streets of Little Rock will soon be paved with it.

Beginning five or six miles from Little Rock are large deposits of beauxite, covering a part of two counties. It is used for making aluminum, among other things, and is said to be the largest and by far the best field in the United States. The Pittsburg Reduction Co. and the Chicago Chemical Co. are large purchasers of the product of these mines. Before they were discovered and worked the main supply of beauxite was imported from abroad.

The interest of the Goulds in Little Rock and in Arkansas is indicated by the great shops here, and by that road's large holdings of lands along the Iron Mountain road. That George Gould, as well as his father before him, were among the first to see the railroad possibilities in the Southwest has long been indicated by their operations there. It appears from projected lines on recent maps of the Gould systems that much new territory in Arkansas is soon to be opened up. One indicated line is from Little Rock to Greenwood, on the south side of the Arkansas river, and another is from Greenwood south to Nashville, Ark. This will give new transportation facilities to a part of that remarkably trackless space reaching southwest from St. Louis through western-middle Arkansas to Texas. But a road of still more interest to people who have been aware for so long of the great lead and zinc wealth of Northern Arkansas is the indicated line from Cushman's to Carthage. There are those who predict that when that line is built there will be a development of those lead and zinc fields which will somewhat resemble the rush to a new gold camp. Up in the mountains, days away from hotels, from railroads and from any comforts, about the only ones who ever went were mining enthusiasts. The common experience of such men of means as were lured there has been an utter longing for a square meal and a good bed, the jolting mountain ride and the humble rustic fare causing all interest in mining propositions to ooze out before the wonderful exposed ledges of ores had been reached. That there is marvelous wealth in those Ozark hills, however, all reports would seem to conclusively prove, and the time is looked for when Arkansas lead and zinc will have a world-wide fame.

Down around Little Rock a new railroad project which is interesting the people much just now is the contemplated extension of the St. Louis, Memphis & Southeastern, now being built to give the 'Frisco a river line from St. Louis to Memphis. The road is now in operation between Cape Girardeau and Hoxie. Two engineering corps are in the field between Hoxie and Little Rock seeking a water-level grade. According to Arkansas laws, the company took out incorporation papers August 4, and the line will be built to Little Rock without delay. This road some time since bought the Watkins road in Louisiana, and it is the supposition here that from Little Rock a line will be built to a connection which will take it to the Gulf. ALBERT PHENIX.

The Board of Trade of Wheeling, W. Va., is circulating a pamphlet describing the great supply of natural gas for that city and giving a list of the industries which have recently been established in and near Wheeling.

The sales in the Joplin (Mo.) district during the week ended August 9 were 11,553,820 pounds of zinc ore and 1,327,180 pounds of lead ore, valued in all at \$219,889.

NEW ENGLAND AND THE NORTH IN EARLY SOUTHERN LIFE.

By EDWARD INGLE.

[Written for the Manufacturers' Record.]

Without knowledge of the Northern-born elements in the South and their deeds the early history of the country may hardly be understood.

John C. Calhoun studied at Yale, and completed his course in law at Litchfield. To this collegiate career in Connecticut was credited in after years his protectionist attitude in 1816. Such a theory would hardly stand in the light of New England's rather mild tariff views at the beginning of the last century as exemplified by Webster, for instance. Calhoun's life in New England at an impressionable age might with greater reason be suggested in explanation of his philosophy of the relations of individual States to the American federation. For, in his college days, New England had something of pre-eminence in this country as an advocate of secession.

In Calhoun's case, especially in view of his devotion to his ideas of the Union, the influence of New England must be regarded as of minor consequence, if, indeed, it was at all practically potential. But the influence of New England and the rest of the North, exerted directly and indirectly upon the South, must surely be taken into account in any study of life in the South during the seventy or eighty years before the second American revolution. For through the first half of that period and before the Eastern States had begun to stretch by canal and railroad toward the middle West, there was a considerable southward travel along the old routes on the seaboard, the Indian war trail following the lines of the Appalachians and the routes of the merchant caravans between Carlisle and Charleston. The drift was toward the South, or rather toward what was then the Southwest, because it was the new country, and there were opportunities for the professional man and the merchant better than at home. The migrants in the majority of cases became thoroughly identified with the people of their new homes, their family names today being rather Georgian or Carolinian than New England or Pennsylvanian. They contributed their share to the growth of older States and to the foundation of new ones, and as the heads of educational institutions, as leaders in politics and as teachers in other ways were most effective in the making of Southern history. Three or four instances of the diversity of their gifts may be mentioned:

Quite notable are the careers of the four Wadleys, natives of Brentwood, N. H., with a long Puritan ancestry behind them. William Morrill Wadley, after serving his apprenticeship at blacksmithing, followed his trade for a while at Savannah, and then becoming a contractor on the Central Railroad, rose to general superintendent of it and to manager of the State Railroad. Becoming general manager of the New Orleans, Jackson & Great Northern Railroad, he spent eleven years in Louisiana and Mississippi, during which time he held several executive positions in railroading, and during the war was made superintendent of transportation in the adjutant-general's department of the Confederacy. A pioneer in railroad consolidation in the South, he, as president, rebuilt the Central Railroad of Georgia after the war, and left that system a monument to his courage, enterprise, energy and foresight. David R. Wadley, after spending a year in Virginia, moved to Georgia. He helped his older brother in the railroad contracting work, and subsequently founded a long-lived saw-mill business.

Moses Wadley was also in the lumber business in middle Georgia, and for a while was engaged upon bridge contracts in Louisiana, and Dole Wadley, the youngest of the four, was associated with Moses as a pioneer in building railroads exclusively for the lumber business and in getting out heavy bridge timber. Their forty-one years of successful business was interrupted only for a short while by the burning of their mills during Sherman's march through Georgia.

Hamilton Smith of Kentucky was a native of Durham, New Hampshire, and was for a while a teacher in Washington, D. C. Having been admitted to the bar, he removed to Louisville in 1833. Seven years later he became interested in coal lands at Cannelton, Ind. He wrote industrial articles for the Manchester (England) Guardian and a series of articles on manufactures in the West for the Louisville Journal. He kept in close touch with Southern industrial aspirations, and encouraged them by voice and pen. In 1848 he interested gentlemen of Kentucky, Indiana, Mississippi and Louisiana in a model cotton mill at Cannelton. Charles T. James of Rhode Island, who was one of the strongest advocates of his day of cotton-mill building in the South, became a stockholder in this enterprise, which began operation in 1851 with 10,000 spindles in a building 287 feet by 65 feet and 106 feet high.

New Hampshire produced Daniel Pratt, a preacher of the Gospel of Work, who, after a few years in Georgia, founded Prattville, Ala., as a manufacturer of cotton gins, selling all through the lower South. Around his original plant grew a number of other industries under his control and guidance, and as a token of appreciation of his services to the State the University of Alabama conferred upon him in 1846 the honorary degree of Master in the Mechanic and Useful Arts.

H. W. Huntington, a native of Connecticut, became a resident of Mississippi in 1816. He spent some time at Natchez, and in 1840 removed to the north side of the Tensas river in Louisiana, where lay his plantation, a model one of the South. Like so many New Englanders and so many Southerners of that day, he had learned a trade in youth. He was a skilled artificer in silver, steel and iron, and one of his diversions was the keeping of accurate thermometrical, barometrical and rain records.

James Smith, a native of Litchfield, Conn., introduced near Greenville, S. C., the culture of figs, almonds and dates, and in 1848 started a tea garden with 500 plants brought from China.

These men were of the number of incomers whose quiet life attracted no wide attention, but who, in their way, wrought mightily for the South. More notable records of services to the State ranging from colonial days to the middle of the last century occur to the delver in American biography.

There was Daniel Morgan, a native of New Jersey, but belonging in history to Virginia. He served as a teamster in the ill-fated campaign of General Braddock, was active in subsequent Indian warfare, and at the outbreak of the Revolution joined the American army at Boston and saw service in the North and in the South, his last military services being as commander of the Virginia militia at the time of the Whiskey Insurrection in Pennsylvania in 1794. Congress gave him a gold medal for his conduct at the battle of

Cowpens, and he served two terms as a representative in Congress.

Peter Muhlenburg, a native of Pennsylvania, distinguished himself in a dramatic way while a resident of Virginia. He was educated for the ministry, and was rector of a church at Woodstock when the war was proclaimed against Great Britain. On a certain Sunday he preached from the text, "There is a time for everything under the sun." His sermon concluded with the words, "There is a time to fight, and that time is now." Then throwing aside his clerical robes he displayed himself in a colonel's uniform, and ordering the drums to beat for recruits, he marched to the seat of war.

Another Pennsylvanian, Gen. William Davidson, was educated in North Carolina, saw strenuous services at Brandywine, Germantown and Monmouth, and fell mortally wounded at Cowan's Ford, N. C., in 1781. His memory is preserved in Davidson College, N. C., founded largely through the instrumentality of his son.

Gen. Anthony Wayne, "Mad Anthony," was born in Pennsylvania, and rendered that State services in the field and in the forum. Georgia recognized his services as a commander in the army in the South by presenting him with a farm, from which he became a member of the convention which framed the first State constitution, and later was elected to Congress.

In the South Wayne was associated with Gen. Nathaniel Greene, a native of Rhode Island, who also was given evidence of the gratitude of Georgia in the shape of a plantation on the Savannah river. That plantation of General Greene was the connecting link between New England and the South, probably the most momentous in American history. For it was there, while he was the guest of General Greene's widow, that young Eli Whitney of Massachusetts, following the suggestion of Georgia planters, demonstrated in his saw gin the means whereby machinery could with wonderful economy supplant hand labor in preparing cotton for the spindles, and gave thereby the joint impetus to New England cotton manufacturing and Southern cotton raising by slave labor, around and through which was written the political, social and industrial history of the country for the next seventy years.

That invention gave a twist to American energies with a force which has seldom been calculated, but which may be readily raised if one considers what the United States might not have been without cotton. Those energies as exerted in the South were more or less tempered by the activities in public affairs of Northern-born men, and by the training of young Southerners in Northern colleges, or in colleges directed by Northern men sent from Princeton, Yale, Harvard, Brown and Bowdoin colleges.

It is quite remarkable that many of the settlers from the North became most extreme Southerners. John Slidell, who is best remembered, perhaps, as a Confederate commissioner to France, who figured with Commissioner James M. Mason in the Trent affair of 1861, was several times a member of the Louisiana legislature, United States district attorney, minister to Mexico, representative in Congress, and a member of the United States Senate, where he became one of the most strenuous leaders in Southern political opinion. He was born in New York.

John A. Quitman, one of the most prominent of Southern expansionists in the early days, the leader in the movement for the annexation of Cuba, a fighter in Texas against Mexico and a leader in the Mexican War, was also a native of New York. He served in the legislature of

Mississippi, being at one time president of the State senate, was chancellor of the State and a judge, a representative in Congress and governor of Mississippi.

David S. Kaufman, leaving one brother in Pennsylvania, and another to become rector of St. Philip's Church, Charleston, read law with General Quitman at Natchez, Miss., and then moved through Louisiana to Texas, where, in 1838, he was chosen a representative in the Texan congress, serving twice as speaker of the house, and subsequently as a member of the senate, presenting the report favoring annexation of Texas to the United States. One year after he was appointed to the diplomatic service between Texas and the United States, and upon annexation was elected as one of the first representatives from Texas in Congress.

Equally interesting was the career of Albert Pike, a Boston boy, who died only a few years ago as the highest Masonic dignitary in the United States. He was practically self-educated, but in 1831 he went to the Southwest, and, after trading and trapping experiences, settled at Fort Smith, Ark. He fought as a dragoon in the Mexican War, and practiced law subsequently in Arkansas and Louisiana. He was a pioneer in the project for building a railroad connecting the Mississippi and the Pacific ocean. His speeches and writings were intensely Southern.

Mississippi was the home of Sargeant S. Prentiss, who, however, came all the way from Portland, Me. After graduating at Bowdoin College he lived for a short time at Cincinnati, Ohio, but later, while completing his legal studies, he was tutor in a private family at Natchez, Miss. From his earliest appearance at the bar he gained a reputation for oratory which subsequently placed him at the head of the profession in Mississippi. He served in Congress from that State, but preferred the practice of law to politics, and easily led not only in Mississippi, but also in New Orleans, where he lived for a while.

Robert J. Walker, appointed from Mississippi by President Polk as Secretary of the Treasury, was a native of Pennsylvania. He served in the United States Senate and as Secretary of the Treasury, was the father of the tariff bill, perhaps the most scientific and equitable one ever framed, and working so satisfactorily that ten years later amendments under its provisions were supported almost as cordially in New England as in the South. He was not in sympathy with other Mississippians of his day. He favored gradual emancipation of slaves and freed his own, and his convictions on that point were influential in making of short duration his career as governor of the Territory of Kansas. When the war broke out he was a strong Unionist, and rendered the United States financial service abroad.

Of an earlier time was Edward Livingston of Louisiana. Involved in difficulties of a serious character from which he did not emerge for many years, he left his native State, New York, and, settling at New Orleans, he gained eminence as a lawyer and writer. He was a member of the Louisiana legislature, and served several terms in Congress. Two years after entering the Senate he was appointed by President Jackson Secretary of State, and subsequently minister to France.

One of his contemporaries was John MacP. Berrien of Georgia. Born in New York and educated at Princeton, he became in Georgia solicitor general, a circuit judge, a colonel of cavalry, a member of the State legislature and a judge of the Supreme Court. Three times he was a member of the United States Senate, and he was Attorney-General in the first Cabinet of President Jackson.

Georgia was also fortunate in having Abraham Baldwin as a citizen. Connecticut

was his birthplace and Yale his Alma Mater. After service in the Revolutionary army he was attracted by General Greene to Savannah, and after admission to the bar was elected to the legislature, and while there became the father of the University of Georgia in drawing up its charter and securing the passage of an act endowing the institution with 40,000 acres of land. He was elected the first president of the university, but preferred another man. Baldwin served from Georgia in the Continental Congress, in the convention which framed the United States Constitution, in the United States Congress as representative and senator, and as one of the negotiators of the treaty under which Georgia ceded a vast western territory to the federal government.

Others typical of this Southward movement were found in the following-named States:

In Virginia, James Stephenson of Pennsylvania, member of the assembly and representative in Congress.

In Texas, Timothy Pillsbury of Massachusetts, State legislator and congressman.

In Tennessee, Horace Maynard of Massachusetts, professor for a time in the University of East Tennessee, and congressman; Joseph Anderson of Pennsylvania, one of the framers of the State constitution, a United States senator and comptroller of the treasury.

In South Carolina, Andrew Pickens of Pennsylvania, Revolutionary officer, commissioner to the Indians, congressman and governor.

In North Carolina, Hugh Williamson of Pennsylvania, member of the State legislature, of the constitutional convention of 1787, congressman and author of a history of the State; Henry M. Shaw of Rhode Island, member of the legislature and congressman; Nathaniel Boyden of Massachusetts, a teacher, member of the legislature and congressman; Alexander Martin of New Jersey, governor and United States senator.

In Missouri, James J. Lindley of Ohio, circuit attorney for eight counties and congressman; Edward Hempstead of Connecticut, territorial representative in Congress.

In Louisiana, Miles Taylor of New York, congressman; Henry A. Bullard of Massachusetts, who had also lived in Pennsylvania, Tennessee and New Mexico, judge, congressman, secretary of State and professor in the University of Louisiana; Josiah S. Johnston of Connecticut, who had also lived in Kentucky, representative and senator in Congress.

In Kentucky, Joseph Desha of Pennsylvania, congressman and governor; John Chambers of New Jersey, for a time territorial governor of Iowa, and congressman; Daniel Breck of Massachusetts, member of the legislature, judge and congressman; the two Hardins of Pennsylvania, Benjamin, a congressman, and Martin D., a member of the legislature and United States senator; John Rowan of Pennsylvania, member of the constitutional convention, secretary of State, congressman, judge and United States senator.

In Georgia, T. Butler King of Massachusetts, member of the legislature and congressman; Joel Abbott of Connecticut, congressman; Hiram Warner of Massachusetts, judge and congressman.

In Florida, James D. Westcott, who, though born in Alexandria, Va., spent his boyhood and early manhood in New Jersey, secretary of the Territory, member of the Territorial legislature, United States district attorney, member of State convention and United States senator.

In Delaware, James A. Bayard of Pennsylvania, representative and senator in Congress, minister to France, and one of the negotiators of the treaty of Ghent;

M. W. Bates of Connecticut, member of the legislature and congressman.

In Arkansas, Chester Ashley of Massachusetts, representative and senator in Congress.

In the District of Columbia, John P. Van Ness of New York, mayor of Washington city, first president of the Bank of the Metropolis and a major in the District militia.

Interesting as the careers of these men were as indicating the adaptability of the men of one part of the country to conditions in another at a time when there were few elements working for national uniformity, and also the readiness of the South to recognize ability from any quarter, they hardly equal in influence the lives of early educators.

With some marked exceptions, the early history of the colleges in the South is closely identified with lives of men of Northern birth and Northern education. Many an institution in Virginia, the Carolinas, Georgia and Tennessee originated in the educational instincts and activity of that mighty race of Scotch descent which dwelt for a time in the north of Ireland and then came to America to make the Revolution a fact and to dominate great expanses of this country, especially the South. The teachers among this race in the South were often preachers, too, and their "log colleges" were scions of Nassau Hall.

A typical pioneer of them was the Rev. Hugh McAden, a native of Pennsylvania, who, after a missionary tour in Virginia and Carolina, was settled over churches in North Carolina. Other Pennsylvanians who left their impress upon that State were Rev. David Caldwell and the Rev. James Hall. These were Princeton men, as was also the Rev. Joseph Caldwell of New Jersey, the first president of the University of North Carolina, who, in 1827, built for that institution the first astronomical observatory in the United States, the university's second president, the Rev. Dr. Robert H. Chapman, was also from New Jersey. Connected with the institution as professor of mathematics, and afterward of chemistry, mineralogy and geology, was Dr. Elisha Mitchell of Connecticut, who died in the cause of science, and whose remains lie within his monument, Mitchell's Peak, the highest mountain on the eastern half of this continent. From Connecticut came also Denison Olmstead, professor of chemistry, who undertook for North Carolina the first geological survey of any State in the Union, and the Rev. Dr. E. A. Andrews, professor of ancient languages in the same institution. New York sent the Rev. Dr. Samuel Wait to be principal of Wake Forest Institute, now become a flourishing college.

Another president of the University of North Carolina, David L. Swain, who stepped from the governorship of the State into a long and valuable educational career, was one of the many instances like that of Hammond in South Carolina of the force of New England and other Northern blood in the South in the second generation. For his father, George Swain, was a native of Massachusetts, who, moving to Georgia, served in the State legislature and in a constitutional convention, and was otherwise prominent in politics. James H. Hammond of South Carolina, governor and senator, and the intimate of Calhoun, was the son of Elisha Hammond of Massachusetts, who settled in South Carolina as a teacher, and was at one time professor in South Carolina College. So, too, Dr. Frederick May of Boston, one of the leaders in the social and professional life in Washington, was the father of Henry May, a congressman from Maryland, while the father of James D. B. De Bow of South Carolina and

Louisiana, professor of economics and statistics, superintendent of the census of 1850 and the great economic and political magazinist of the South, was a Jerseyman. From New Jersey Lewis Le Conte went to Georgia, where he became the father of John and Joseph Le Conte, the two scientists connected at one time with the University of Georgia.

When Abraham Baldwin resigned the presidency of the University of Georgia, which was then about to begin actively its great career, his friend, Josiah Meigs of Connecticut, called to the chair of mathematics, was given the presidency of Franklin College, as the university was then called. And among his successors in that office was the Rev. Dr. Alonzo Church of Vermont, under whose regime were graduated such men as Robert Toombs, Alexander H. Stephens, Benjamin H. Hill and Herschel V. Johnson, illustrating the immediate touch of New England upon Southern leadership, just as the Princeton influence may be traced through the careers of such students of the University of North Carolina as William R. King, first United States senator from Alabama and Vice-President of the United States; Senator Thomas H. Benton of Missouri, Governor John Branch of North Carolina and Florida and Secretary of the Navy; Senator John H. Eaton of Tennessee, Secretary of War; Judge A. D. Murphy, known as "the father of the public schools of North Carolina;" Senator Willie P. Mangum of North Carolina, Bishop Leonidas Polk of Arkansas and Louisiana; Gen. Thomas J. Green of Texas, Bishop William M. Green of Mississippi, Bishop C. F. Hawks of Missouri, Bishop Thomas F. Davis of South Carolina, Jacob Thompson of Mississippi, Secretary of the Interior; President James K. Polk of Tennessee, Postmaster-General Aaron V. Brown of Virginia and Tennessee, John Y. Mason of Virginia, Secretary of the Navy and Attorney-General; Bishop James H. Otey of Tennessee, and many others. Baldwin and Meigs were Yale men. Princeton was represented in the forth president of the University of Georgia, the Rev. Dr. Robert Finley, who previously had been a successful teacher in an academy at Charleston, S. C., and who was an originator of the American Colonization Society, to whose efforts to solve the slavery problem in the interests of owned and owner alike is due the existence of the Republic of Liberia.

Jonathan Maxcy, the first president of South Carolina College, was a native of Massachusetts, while Brown University sent to the College of Charleston the Rev. Jasper Adams, and Furman University, in the same State, is a memorial of Richard Furman of New York, who, settled at the time at Charleston, suggested, as president in Philadelphia in 1814, a national movement in higher education, with the capital as the center, out of which grew Columbian University at Washington, D. C., and with auxiliaries in South Carolina and elsewhere.

Tennessee's educational efforts drew such New Englanders as David Sherman, Charles Coffin, Joseph Estabrook and George Cook to the East Tennessee College, afterward merged in the University of Tennessee, and made Samuel Carrick of Pennsylvania president of Blount College, the germ of the University of Tennessee, and Philip Lindsley of New Jersey, president of Cumberland College, now the University of Nashville.

The professional schools of the University of Maryland drew upon the North for the occupants of some of their chairs, while the first president of St. John's College, Annapolis, John McDowell, came from Pennsylvania, and the second, Bethel

Judd, and the fifth, Hector Humphreys, from Connecticut.

New England and Pennsylvania divided the honors in Virginia. The Rev. S. S. Smith, the rector of Hampden-Sidney Academy, and his brother, the Rev. John Blair Smith, first president of the institution as a college, were from Pennsylvania, as were also the Rev. William Graham of the Liberty Hall Academy, the nucleus of Washington and Lee University, and William H. McGuffey of the University of Virginia. Noah K. Davis, another professor at the University of Virginia, but in the post-bellum period taught in Alabama between 1849 and 1860—he, too, was a native of Pennsylvania. Jonathan P. Cushing of Hampden-Sidney was a native of New Hampshire, and Charles Collins of Emory and Henry of Maine, and the Rev. John Emory of Randolph-Macon came from New York. Old William and Mary had for a time in its faculty the Rev. Reuel Keith, a native of Vermont, who afterward was a professor at the Virginia Theological Seminary near Alexandria, which drew upon Pennsylvania for the Rev. James May and upon Maine for the Rev. Dr. Joseph Packard, for more than fifty years a professor there, and fifteen years dean of the faculty.

The second Protestant Episcopal bishop of Virginia, Richard C. Moore, was a native of New York, from which State came also Bishop William R. Whittingham of Maryland. Another bishop of the Protestant Episcopal Church, Charles T. Quintard of Tennessee, was at first a physician at Athens, Ga. In 1851 he became professor in the Medical College at Memphis, Tenn., and entered the ministry in 1855. During the war he was both chaplain and physician and surgeon in a Tennessee regiment. His career as bishop, like that in North Carolina of Bishop Lyman from Massachusetts, was subsequent to the war.

The Rev. Samuel K. Jennings of New Jersey, better remembered, perhaps, in medicine than in the ministry, was influential in medical education in Maryland, where Nathan Ryno Smith of New Hampshire, the son of the great Yale professor, Dr. Nathan Smith of Massachusetts, and a cousin of Dr. Nathan Smith Lincoln, professor in Columbia University at Washington, was the builder up of a great medical school and the head of a great family of physicians and surgeons.

This list is by no means intended to be exhaustive. It is merely typical and suggestive of an interesting study of influences and counter-influences among the sections of the country which sent Tom Corwin of Kentucky to Ohio, Abraham Lincoln from the same State to Illinois, and Jefferson Davis to Mississippi. George D. Prentice, the great Louisville editor, from Connecticut, Oliver P. Baldwin from New York to Richmond, Va., and A. S. Abell from Rhode Island to Baltimore, a pioneer in modern newspapering, and gave Washington Allston a happy life at Cambridge, Mass. It should not neglect the fact that William H. Seward of New York and William Ellery Channing of Massachusetts were in their youth tutors in Southern families; that William Lloyd Garrison of Massachusetts passed from jail in Baltimore to escape a few years later lynching in Boston, and that A. Bronson Alcott of Connecticut, failing to gather his expected pupils in Virginia, reverted to peddling among the families of the lower James, and, according to one biographer, acquiring "graceful manners, a fair knowledge of the world and much reading in good books," became a New England philosopher.

Three important phases of American history are yet to be adequately treated. The first is the effect of Northern migration upon the ante-bellum South; the second, the effect of migration from the

South upon social and political tendencies in the region beyond the Ohio before the war, and the third, the effect upon the North and the counter-action upon the South of the movement from the South to the North since the war. The proper treatment of such subjects will throw a

wonderful light upon the making of American history, and help to a wider and deeper understanding of the prevailing Americanism of the South. The story which has been sketched here in rather haphazard fashion will, if thoroughly followed out, be found to be most thrilling.

TECHNICAL EDUCATION.

By L. S. RANDOLPH, M. E., Professor of Mechanical Engineering at the Virginia Polytechnic Institute.

[Written for the Manufacturers' Record.]

It is always well in a discussion to begin with definitions. Many a heated discussion and warm debate has been ended by the parties finding that they were arguing on the same side, but had opposite or antagonistic ideas as to the meaning of a word.

By technical education we mean the education of men and women in those branches of learning that facilitate their lifework. A girl who is taught sewing is educated just as much, technically, as the man who is taught to run a lathe. But the world has applied this term rather to that class of education which has for its object the training of men for work in industrial pursuits as distinguished from the classical studies, such as Latin, Greek, literature, history, etc., and it is to this type of education, or rather this special meaning of the word, that we shall direct our attention in this article.

In all industrial processes, we may say, to use a military simile, there are officers and privates, sometimes called engineers and artisans, and the object of our technical education is to train these. Their training is different, as their work is different. The artisan, who corresponds to the private, is only trained to the skillful manipulation of tools and the execution of work which has been already planned by some one else. The engineer is the one who plans and directs this work. In the training of these two classes there is, at the present time, much misunderstanding, and much time, effort and money wasted. The position of the engineer in the world is not fully understood, and particularly so in the South. It is rather astonishing to the writer to find not only how few people have a clear conception of the work of the engineer, but how many who should know better are equally ignorant.

It was but a year or so ago that one who was applying for the position of professor of mathematics and civil engineering in possibly the best technical school in the South brought letters of recommendation and endorsement as to his ability as a teacher of mathematics alone, and paid no attention whatever to the question of his civil engineering. When asked what experience he had had in civil engineering his reply was "none at all, but we have two months before the session opens, and I think I can get it up in that time." This man, I am informed, had been teaching mathematics in one of our smaller colleges for ten years.

We could multiply such instances almost indefinitely, showing the utter failure to comprehend the requirements of modern engineering education, or the position of the engineer as regards the professions.

The engineer has been defined as one who applies the discoveries of the scientist to the industrial uses of mankind. He is, as it were, the connecting link between the scientist, who, from the nature of things, must to a large extent be impractical, and the artisans, who, from the same reason, must be unscientific. This idea was well voiced by Professor Henry, who, when showing some one the scientific principle upon which the Morse tele-

graph was based, was asked the question: "Why do you not apply this to the transmission of news through long distances?" He replied: "That is not my business. It is my place to discover principles and explore the unknown. It is for some one else to apply it."

The engineer is the one who applies these principles. When we take this definition into account we can more accurately plan the education that the engineer should have. The engineer in his training must be made to have certain definite qualifications, and his success is dependent upon these. He should, first of all, be well trained in the sciences, such as chemistry, physics and mathematics; these three are the foundation stones for the structure of our modern life. The engineer should be able to handle them readily, and should be capable, if necessary, of checking the work of the scientist to prove its accuracy. His training should be by means of what is known as laboratory methods, as they are by far the best, so that he could do this scientific work, and should it become necessary, go into the realms where the scientist is working. He should also be trained to the application of these principles to every-day affairs, and in this respect his business education should be thorough, particularly so in its economic training, which must guide every successful enterprise.

As the engineer must make his ideas clear to others, his literary training should also be thorough, so that he should be able to express himself in thoroughly good English, or, in other words, he should be able to write and speak well, and this alone is essential and most important. He should have command of at least two foreign languages, preferably French and German, and he should be able to read and write these fluently, although the question of their grammatical construction should be secondary, as it is non-essential. In this connection the ordinary college or university course is of little use to him, the modern or Meisterschaft system of language being by long odds the best.

Many errors are being made today in the training of engineers from the failure to recognize these principles.

We have several universities of considerable reputation which give courses which are little more than applied mathematics and call them engineering courses. In many cases the instructors themselves, although well versed in the mathematical theories sometimes employed in engineering practice, are not engineers or to any great extent familiar with the practice of engineering. Such a course is misleading to the student, as he is compelled to practically learn the business after he comes out. He is, furthermore, hampered throughout his entire life by the inadequacy of his preparation and by the constant tendency to hark back to impracticable methods which he has not entirely unlearned.

We find, on the other hand, numerous institutions which go to the opposite extreme—a little mathematics, a small amount of physics, no chemistry being

taught, the work being confined almost exclusively to shop work (generally an excessive amount), and some little details of engineering, their principal error being the study of specific cases rather than the broad principles and the application of these broad principles. Instead of laying down the broad principles upon which the machine is constructed or designed, and teaching the men to make their own applications, they are taught the application and left to find out the principle themselves, the result being that they seldom discover it.

In the first case the attempt to teach engineering results in the training of a low-grade scientist, and in the second case an illy-trained artisan. There are probably more institutions making this last error than the former, and their number seems, if anything, to be growing. The temptation to claim a high standard with inadequate equipment and teaching force is irresistible.

The proper grading and planning of the technical schools of the South is a matter of such grave importance and grave errors may be so easily made that it should be carefully studied and carefully planned. The distinction between the artisan or mechanic and the engineer should be well and carefully drawn.

One very common error is in the amount of shop work, the idea being that the engineer should have the same training of the hands as is given to the mechanic, failing utterly to take into consideration the effect upon him of the increased or improved mental training. Again and again has the writer seen this principle exemplified in ordinary shop practice. Apprentices with little or no education will take months and sometimes years to learn to do a certain piece of work with the facility and accuracy of an old hand. Yet a man with but fair education, in one case, equivalent to the freshman and sophomore years in an ordinary college, would almost invariably the second time he did a piece of work equal in speed and accuracy the best mechanic in the shop. Nor was this an isolated case.

Within the last few weeks the writer has heard of one of the recent graduates of the Virginia Polytechnic Institute, one who had had the least amount of shop work that would possibly let him pass, who was not only directing the work in a shop, but was called upon in difficult cases to show the men how to chuck the work on the lathe and planer, and in several cases, where the mechanic said it was impossible to do a certain piece of work, this young man has demonstrated that it could be done. Such cases could be multiplied indefinitely almost by almost every high-grade institution.

If, instead of requiring the engineering student to get hours of lathe work and planer work (where the bulk of the work is done by the machine and the boy sits down chatting with his companions), an increased amount of vise work were given, we would then get the training of the hand and eye, which is desired. The only training, however, of these members which amounts to anything must be gotten thus from hand or vise work.

For machine work proper the most satisfactory method is to give the engineer's student a thorough familiarity with one of a type of machines, and by means of lectures, illustrated or otherwise, familiarize him with the other different types of that machine and the methods of doing work upon them. If his education has kept pace with such instruction he will not have the slightest difficulty in applying, even with his own hands, or instructing others in the principles and the knowledge which he gained in this way. One thing, however, should be taken into ac-

count, and should always be borne in mind, that in the instruction it should be constantly remembered that the student is to use his information. The writer upon one occasion had a student at the board make the most superb demonstration of the deduction of Francis' formula for the flow of the water over weirs. When taken out into the field shortly afterwards, within forty-eight hours, and after having assisted in building a small weir across a stream, this same man asked the writer how we were to calculate the flow of the stream. The young man knew his tools, knew what it was, could readily construct it, but had not the faintest idea of the purpose for which it was to be used.

Furthermore, the young man should be trained to recognize the limitation of the formulae and the physical laws which he studies. To have a man, as in many cases has occurred, give the strength of bar iron in three places of decimals, that is, to thousandths of a pound, when his machine will hardly measure accurately within 100 pounds of the aggregate load, argues a very indifferent training or a very dull man.

Not only should the physical laws be taught, that is, the laws of physics, chemistry and mathematics, but a broad, liberal foundation should be thoroughly laid for the application of these laws. The concrete cost should also be taught; not only the mere solving of the problem, but the determination of the economic value of such a solution. Engineers must not only be able to build bridges, but must build bridges cheaper than anyone else.

When Lord Kitchener wished to bridge the Atbarra river he came to America, because there he could get the bridge for less money and less time. Both English and American engineers could build bridges of superb design, but the deciding factor was the question of time. So it behooves our people to train their engineers to recognize these two most important factors, for if we are to lead in this matter of industrial development, our men must be the best, and must be trained best.

It is of little use to put our Southern boy into the management of a cotton mill, bridge shop or a light plant unless he can run the establishment more economically than anyone else. It is useless to design steam engines, spinning-frames, etc., for unless they are to be the best on the market, they cannot be sold; hence ruin stares him in the face.

In the manual training of the artisan a very different set of conditions obtain. To the majority of people who have little to do with machinery and mechanical appliances (and particularly is this true of those whose work has been along literary lines), machinery and machine appliances and operations seem so extremely complicated and abstruse that they are inclined to magnify very much the difficulties which line the way of mastering them. They do not realize how instinctively almost one can grasp the principles of a new machine, even when his education is slight; it requires only that he should be familiar with machinery.

We find, therefore, that in many manual training schools the work lags and the boys are not pushed to get out what they should. Possibly the worst criticism on the schools of this class is that the men turned out are too slow, the possibilities for training in rapidity not having been utilized.

This class of schools should give the boy a broad training by means of illustrated lectures and much practice in the details of his trade, and the work should

be confined to one trade as much as possible; that is, a boy should be made a molder, a machinist or a carpenter, according to the character of his work. The greatest error to which our system of technical education is subject is just along these lines. We have in the education of the engineer, where breadth of training is absolutely essential, a tendency to narrowness and so-called specialization. We have electrical engineers who are familiar with electricity only, and who are incapable of solving a large proportion of the problems that come up even before the so-called electrical engineer.

Let us take, for instance, the case of a man who wishes to transmit a certain amount of power. He can do this by means of electricity, compressed air, and, all together, some seven different methods. The electrical engineer is seldom capable of handling but one. In the same way we have hydraulic engineers, sanitary engineers, etc.

Now, while it is true that an engineer may develop specialties late in life, it is practically impossible for him to specialize during his college career and still be sufficiently broadly trained to have the title of engineer. While many are making these mistakes, probably the most serious of all is in those schools that are combining a species of hodge-podge of manual training and engineering education, where they mix up elaborate lectures on the x-ray apparatus with a long, exhaustive course in molding or shop work, and where thermo-dynamics is given to the man whom they are training to run a lathe or planer or swing a hammer at a vise-bench.

A large number of our so-called textile schools are making this serious error. Instead of confining themselves to teaching the trade, they are trying to teach the same boy to be both tradesman and engineer, with the result that he is neither. Our trade schools should turn the men out as machinists, as molders, as carpenters, etc., with a definite occupation and of some definite use, not, as in so many cases, nearly all trades combined in one boy, and without capacity to earn a decent living at any one of them.

Paducah Iron Furnace.

[Special Cor. Manufacturers' Record.]

Paducah, Ky., August 11.

The Paducah iron furnace has been purchased by the Kentucky Iron Co., which is made up of Chicago capitalists. The officers of the company are W. J. Hilands, president; John Cudahy, vice-president, and A. D. Plamondon, secretary and treasurer. This company has secured several thousand acres of rich iron-ore land lying on the Cumberland and Tennessee rivers, and a large tract of coking coal land. The furnace will be put in blast as soon as possible. The Western Kentucky ores make the very best quality of iron, and it is predicted that the output of the Kentucky Iron Co. will be of a superior quality. The manager of the company is Geo. S. Finney of Chicago, who is one of the most successful iron manufacturers of the West.

The Paducah Curtain Pole Co. has been formed and will engage extensively in the manufacture of curtain poles and wood novelties.

West Virginia Notes.

[Special Cor. Manufacturers' Record.]

Wheeling, W. Va., August 12.

C. D. McCarty has been directed to make plans for the new plant at Elm Grove, W. Va., of the Pittsburgh Warming & Heating Co. The main building will be 100x200 feet, the warehouse 50x100 feet. There will also be a small office and other appurtenances.

Secretary Anthony Bowen of the Clarksburg Board of Trade is seeking a location for a wrench plant which Boston capitalists want to locate here.

Manager T. M. Jackson of the Jackson Iron & Tinplate Co. of Clarksburg announces that the company will shortly prepare plans for eight additional tin mills, costing \$500,000. A complete black plate and tinning department will be constructed.

THE BIRMINGHAM DISTRICT.

Sales Running Into Several Months of Next Year at Agreed Prices.

[Special Cor. Manufacturers' Record.]

Birmingham, Ala., August 11.

There is nothing new in the iron market further than the sales are maintained at the agreed price of \$17 for No. 2 and run into next year several months, and spot iron is sold for pretty much what the owner asks for it up to \$20.

A matter of congratulation for local business men is the betterment noticeable in the last few days in the lumber business. This has grown in the last few years to be a big thing in Birmingham, and is looked upon as coming very close to iron in importance. The lower grades are picking up from the downfall of a few weeks ago, and there is a generally optimistic tendency all along the line.

A study of the report of iron, steel and cast-iron-pipe shipments for the past year develops some interesting figures. It is given out that from the furnaces of the Birmingham, Anniston, Chattanooga, Middlesboro, Nashville and Sheffield districts there were shipped during the year ended June 30, 1902, 1,624,266 tons of pig-iron and 56,330 tons of steel. The average price of this iron was \$12 a ton, it is estimated, making the returns \$19,491,192. The steel was sold for \$1,464,580, an average of \$26 per ton. Of this amount, 786,479 tons of iron were shipped from the Birmingham district, worth \$9,437,748, and 56,330 tons of steel, at \$26 per ton, making \$1,464,580, or a total metal value shipment from the district, excluding cast-iron pipe, of \$10,902,328.

The steel output will be materially increased as soon as the Tennessee Company gets the two new furnaces it expects to build in operation. The ten tilting furnaces now at work turn out about 16,000 tons a month, valued at \$406,000, which is far below the demand. The steel mill is also to be fully equipped with the largest and most modern engines, which will be installed as soon as they can be secured, though it is known that they have not yet been ordered. The mill is now running full time, all labor troubles having been set aside.

The cast-iron-pipe shipments for the year ended June 30, 1902, from the Anniston, Birmingham and Chattanooga districts were 162,387 tons, as follows: Anniston, 38,759; Birmingham, 79,453; Chattanooga, 43,977. Only 3051 tons of pipe were exported.

Of the iron and steel movement of the whole district for the year, 1,172,179 tons went to the West, and 120,848 tons of the pipe. The balance went East.

Coal is scarce and high is the news one hears, not because there is not plenty of it, but for the reason that labor conditions have been unpropitious, and along some lines it is practically impossible to secure cars. General Manager H. E. McCormack of the Pratt Company says it is impossible to get cars in anything like adequate number. Mr. W. L. Lovell of the Bessemer Land & Improvement Co., operating the Bellelenn mines, says the output there now is 2400 tons a day, and that several fine orders have been turned down lately. This coal is tough, and bears handling, making it very popular for long hauls, especially to the seaboard. Much of it goes for export through Pensacola.

In the Virgilina Belt.

[Special Cor. Manufacturers' Record.]
Virgilina, Va., August 11.

The Holloway mine, which had closed down for two weeks on account of inability to secure coke for the Eustis smelter, has resumed work. These two weeks were the first the mine has been closed since operations were begun there five years ago. There are several hundred tons of high-grade ore now on the surface ready to place on cars as soon as the smelter is ready to receive it.

Mr. Strockan, mill superintendent for the Person Consolidated Copper & Gold Mines Co. at the Dirgy mine, made a recent trip to Ohio to order a new Chilean mill for the concentrating plant, thus increasing the capacity threefold. Several more Wilfley tables will be added to the three Wilfley tables and two Frue Vaners now in use, which, with the increased capacity of the mill, will enable them to handle 150 tons of ore per day. A seam from ten to twenty inches wide of almost pure glance ore, with good concentrating ore on either side, has been exposed for quite a distance in the workings on the lower level. Some native copper is present with the calcocite and bernite, and can be readily observed in the concentrates.

The Bailey mine was purchased a few weeks ago by Boston capitalists organized as the Seaboard Copper Co. Work was begun on the property last week, and the development will be pushed rapidly.

The Pontiac Mining Co., recently organized, is about forty feet deep on its main vein, with surface excavations showing the trend of parallel deposits. The main lead carries calcopryite with the bornite, and good silver values have been given in assays made from the ore in the parallel vein.

Fire destroyed the shafthouse and other buildings at the Arringdale mine on the 3d inst., doing some damage to the machinery and burning the timber in the upper part of the shaft.

It is rumored that a smelting plant is to be erected here in the very near future. If this proves true it will give much stimulus to prospecting and development work.

St. Louis Exposition's Cost.

The Department of Manufactures of the Universal Exposition of St. Louis has just issued a pamphlet in which attention is called to the importance of the exposition from a financial standpoint. The fact is referred to that no undertaking can be phenomenally successful in the present day of immense combinations of capital unless it has exceptional support financially. In this respect the World's Fair at St. Louis is singularly fortunate. The United States government has already appropriated for its use over \$6,000,000, which is \$3,500,000 more than was given to the Chicago World's Fair; the citizens of St. Louis have raised \$5,000,000, the city of St. Louis has appropriated \$5,000,000 through the sale of a special issue of city bonds, and the State of Missouri has appropriated \$1,000,000, which makes a total amount available of \$17,000,000. It may be interesting to remember, in view of these figures, that the Louisiana Purchase Territory, while comprising 1,000,000 square miles of richest soil, cost but \$15,000,000. The St. Louis Exposition, which is to commemorate the purchase, has already—two years before the date of its opening—\$17,000,000 to spend in such celebration. Conservative estimates place the entire cost of the exposition at a figure between \$40,000,000 and \$50,000,000. This is from \$8,000,000 to \$18,000,000 greater than that of any previous world's fair. The importance of

this statement will be more fully appreciated when it is understood that this excess of from \$8,000,000 to \$18,000,000, which in all likelihood will be available for the St. Louis World's Fair, represents an amount which will be spent in perfecting this exposition to a degree far surpassing any previous similar undertaking. When the wonderful accomplishments of the Chicago Exposition of 1893 and the Paris Exposition of 1900 are brought to mind, it is almost impossible to estimate what this situation will produce for the public at St. Louis, particularly in consideration of the greater experience which the world's workers now bring to bear in building expositions.

For a Cotton Mill.

Mr. Nathan Leavitt of Stamford, Texas, writes to the Manufacturers' Record in advocacy of a cotton factory for that place. He says: "Stamford, less than three years old, has a population of 2500 persons. It is the terminus of the Texas Central Railroad, and is the trading point for seven counties. It has an electric-light plant, ice factory, waterworks, flouring mills, cottonseed-oil mill, two banks and other successful enterprises. Forty thousand bales of cotton will be shipped from Stamford this year."

For an Industrial School.

[Special Cor. Manufacturers' Record.]
Huntsville, Ala., August 13.

Mr. R. E. Pettus, president of the Chamber of Commerce, is in correspondence with a prominent Southern educator who desires to establish an industrial school in North Alabama for poor white boys and girls. Mr. Pettus believes that if the people will give a little encouragement there will be no trouble in having such a school located in Huntsville. The matter will be brought before the meeting of the Huntsville Chamber of Commerce.

OIL NOTES.**Facts About Petroleum and Its Uses.**

It is reported that a petroleum spring of good quality has been discovered near Meningie in Australia.

The Florida Ice Manufacturing Co. of Jacksonville, Fla., is preparing to use oil at its works. Storage tanks of 19,000 gallons capacity each have been built, and Texas oil will be used.

The East Tennessee Oil, Gas & Pipe Co. has been organized, with T. R. Price of Knoxville, president; Dr. David Rees of Clinton, secretary and treasurer, and W. B. Liles of Clinton, general manager, to bore for oil on lands in Anderson county not far from Clinton.

T. J. Molinare of Granite, Oklahoma Territory, writes to the Manufacturers' Record that there are indications of immense quantities of oil and gas in Greer county, and that from one well at Granite 165 feet deep from five to twenty barrels of oil can be pumped per day. Mr. Molinare says that this oil is of fine quality, suitable for fuel and lubricating purposes, and that five companies are at work in the field. The oil has been tested satisfactorily by the chemist of the Rock Island system.

It has been decided that the National Department of Agriculture will establish four stations in Georgia and one in Florida to experiment in the scientific manufacture of syrup. Capt. D. G. Purse, president of the Savannah Board of Trade, has been active in the movement resulting in the establishment of these stations, which has also been advanced by the Brunswick Board of Trade.

RAILROADS.

[A complete record of all new railroad building in the South will be found in the Construction Department.]

ATLANTA TO SAVANNAH.**Rumor That the Seaboard May Build a Connection to Macon.**

Advices from Atlanta, Ga., say that the Seaboard Air Line may build an extension from Atlanta to Macon, connecting there with the Macon, Dublin & Savannah Railroad, and thus obtaining a short line from Atlanta and Birmingham to the sea. The report is denied by Vice-President J. M. Barr, who writes to the Manufacturers' Record that there is no truth in the statement that such a connection is contemplated. The rumor probably originated from the announcement that through trains will be run from Macon to Savannah over the Macon, Dublin & Savannah and the Seaboard, and also in the fact that such a line would be of great advantage to the Seaboard system, for there is now no connection between the Savannah part of the system and that running to Atlanta except via Hamlet, N. C. The construction of the Chattanooga, Charleston & Augusta road has been proposed for some time, and it would give a route to the Seaboard from Athens, Ga., via Augusta to Charleston, S. C. This would cross the Savannah division of the Seaboard at Hammond, S. C., and would also afford connection with Savannah, where the great terminals of the company are situated. The Seaboard has, however, close relations with the Macon, Dublin & Savannah road, and the construction of a line from Atlanta to Macon would give a short route from Atlanta to Savannah, and would involve much less construction. Such a route would be particularly available in connection with the East & West Railroad of Alabama, which the Seaboard recently purchased and is now improving and extending.

The distance from Atlanta to Macon in an air line is about seventy-six miles, while the distance from Athens to Hammond via Augusta is about 135 miles. Thus, assuming that the Seaboard could control the Macon, Dublin & Savannah road, the construction of a line from Atlanta to Macon would enable the system to obtain the desired direct connection between Atlanta and Savannah, so that when the East & West road is rebuilt and extended to Birmingham on the west and Atlanta on the east, the Seaboard could have its own short line to haul its share of freight originating in the Birmingham district to tidewater at its own terminal at Savannah.

In connection with this rumor of Seaboard progress in Georgia it is also interesting to note that according to a dispatch from Knoxville, Tenn., the Seaboard Air Line, instead of connecting with the Ohio River & Charleston Railroad by a line from Lincolnton, N. C., will, it is reported, reach the desired connection through the proposed Rutherfordton, Hickorynut Gap & Asheville Railroad, thus establishing a through route from the coal fields at Tom's Creek, in Wise county, Virginia, to Southport N. C. It has long been rumored that the Seaboard would be interested in the Rutherfordton road, but this report, like the former, is yet without confirmation.

A Proposed Electric Railway.

Mr. R. D. Burchard, secretary of the Saline Oil & Developing Co., writes from Marshall, Mo., to the Manufacturers' Record regarding the proposed electric line of the company. He says:

"It is not fully decided yet as to whether it will be electric road or otherwise. It

will run from Miami, Mo., south through Marshall and on to Sedalia, Mo. This will touch several little country towns having no railroad, and will run through a very fine agricultural and stock country, which is about evenly divided between prairie and timber lands. The line will be the means of opening up a good coal field, there being good cannel coal undeveloped on account of no means of transportation."

The road will be about fifty miles long.

GOULD LINES' EXTENSION.**Route of the New Road from Memphis to New Orleans.**

Concerning the proposed extension of the Missouri Pacific Railway from Marianna, Ark., to Trippe Junction, Mr. H. Rohwer, chief engineer of the company, writes from St. Louis to the Manufacturers' Record as follows:

"This line is a part of the proposed line from Memphis to connection with the New Orleans & Northwestern Railway at Clayton, Concordia parish, Louisiana. This line runs southwestwardly from West Memphis to Marianna, thence using the track of the Helena branch from Marianna to Latour, thence in a southwesterly direction to Watson, and from this point to McGehee, the present junction of the Houston, Central Arkansas & Northern line with the Little Rock, Mississippi River & Texas Railway, about ten miles west of Arkansas City.

"From McGehee the present track is to be used to Trippe Junction, and from there south to Halley. From Halley the new line runs almost due south to Lake Village and further on to the State line. This last-described part is now graded, and tracklaying has commenced. From the State line the new road continues south, touching the west bank of Lake Providence, and runs in an almost straight line to Tallulah, the intersection with the Vicksburg, Shreveport & Pacific Railway, and thence almost due south, touching the west bank of Lake St. Joseph and Lake Bruin, to Waterproof, and from this point in a southwesterly direction to Clayton. Grading is now in progress all along the line from the State line to Clayton.

"The line runs its entire length through some of the best and richest soil found in Arkansas and Louisiana, and the country is well settled from Valley south to Clayton. The part from McGehee to Latour and from Marianna to Memphis is mostly virgin timber and partly developed, but as the soil is fertile, this country will be rapidly built up. The total distance from West Memphis to Clayton is 294 miles, and there are no heavier grades than .3 per cent. The maximum curvature, except at connections with other roads, is 3 degrees, and the entire line is safely constructed except, perhaps, against extreme high water."

When completed this new line will give the Missouri Pacific a direct route from Memphis to New Orleans in connection with the New Orleans & Northwestern and the Texas Pacific Railway, which are also Gould lines, and it will also afford a short route between St. Louis and New Orleans.

Southern Pacific Equipment.

Mr. Julius Kruttschnitt, vice-president of the Southern Pacific system, is quoted as saying that the company is now receiving seventy-five new engines of heavy types, thirty-two of them to be for use in Texas and Louisiana. Six of the engines, which are to run between New Orleans and Houston, are compound passenger locomotives of high power, with driving wheels over seven feet in diameter. The company is also receiving forty new

passenger coaches and reclining chair cars, besides four dining cars. In addition to this passenger equipment, the company is receiving 1600 new box cars and 1000 flat cars. It has just ordered 250 oil-tank cars of 10,000 gallons capacity each, and 650 tank cars with 12,300 gallons capacity each.

Between New Orleans and Houston the company is laying 16,000 tons of rails, eighty pounds to the yard, and within a year the entire line between the two cities will be laid with such rails and heavily ballasted. Mr. Kruttschnitt says that the Southern Pacific also has 315 oil-burning locomotives, and when other engines are sent to the shops they are changed to oil burners.

Electric Road to Mining Towns.

Mr. Joseph MacCarroll, president of the Penn State Construction Co., 735 Drexel Building, Philadelphia, writes from Cumberland, Md., to the Manufacturers' Record concerning the electric railway which the company is building between Frostburg and Lonaconing. He says:

"We started to build this road about the middle of April, and have a large part of the work finished. The road is nine miles long. There are a number of towns or villages between the two places; among these are Upper Ocean, Lower Ocean, Midland, Gilmore, Midlothian and Lonaconing. We are now operating the road as far as Upper Ocean, a distance of about three miles. Expect to have work all completed by November 1. We also have contract for a road between Lonaconing and Westernport, on which we expect to commence work early next spring."

The road runs through part of the Maryland coal-mining region.

An Arkansas Project.

Mr. John M. Daggett writes to the Manufacturers' Record from Marianna, Ark., regarding the proposed Brinkley & Marianna Railroad. He says: "I am informed that in the course of a week or ten days the organization will be completed. This town is on the St. Louis, Iron Mountain & Southern Railroad (Helena & Knobel branch), and the object of the Marianna contingent in the Brinkley road is to work in connection with the Choctaw (now Rock Island), and by a connection at Brinkley to obtain competition. Marianna people now have the right of way in this county, and I believe the Brinkley people will work in the interest of Marianna. The road runs through the west end of Lee and the east end of Monroe county through a fine agricultural section, twelve to twenty miles from any other road, and will be a paying line." The road will be about twenty-five miles long.

Atchison's Cut-Off.

The Atchison, Topeka & Santa Fe cut-off from Newkirk, Okla., to Paul's Valley, I. T., is reported ready for the track. This new line, it is stated, will open up a rich country, passing through part of the Osage Nation and Pawnee, Payne, Lincoln and Pottawatomie counties, Oklahoma. It also goes through the towns of Chandler and Shawnee. The cut-off avoids curves and heavy grades, and it is understood will carry most of the through business. It will be about 150 miles long.

A New Southern Route.

The Southern Railway announces that the New York & Memphis Limited fast train is now being operated between Memphis and Bristol over the Southern Railway, between Bristol and Lynchburg over the Norfolk & Western Railway, between Lynchburg and Washington, D. C., over the Southern Railway, and between Washington and New York over the Pennsylvania Railroad. East-

bound the train will leave Memphis at 11 o'clock at night, arrive at Roanoke, Va., at 11.55 the following night, and arrive at New York the next day shortly after the hour of noon. The westbound schedule will be correspondingly rapid. This route shortens the time several hours between Memphis and New York, but no extra charge is made to passengers. Mr. S. H. Hardwick is general passenger agent, with headquarters at Washington, D. C.

B. & O. Royal Blue Book.

The Book of the Royal Blue for August is a Gettysburg number, the leading article being devoted to the great battlefield by Gen. H. S. Huidekoper. It is beautifully illustrated with pictures of all the prominent points where the great conflict was fought. A number of monuments on the field are also pictured. Another article is devoted to the preparations of the Grand Army Encampment to be held at Washington, D. C., during the second week of October. The demand for the July number of the Book of the Royal Blue has been particularly large, on account of its complete and entertaining description of the electrical third-rail system now in use on the Baltimore & Ohio Railroad. It was written by W. D. Young, electrical engineer of the railroad system.

Galveston Docks Opened.

The establishment of a steamship service by the Southern Pacific Railway between Galveston, Texas, and New York was marked at Galveston by a celebration when the first steamer, El Norte, arrived. This celebration also marked the opening of the Southern Pacific docks at Galveston. Among those who spoke at the meeting which was held on the docks were William T. Armstrong, vice-president of the Galveston Business Men's League, Col. Walter Gresham and Norman G. Kittrell.

To Build a Power-House.

The Washington, Baltimore & Annapolis Railway Co. has purchased two acres of land in the eastern part of Hyattsville, Md., and proposes to build there a large power-house to operate its lines and also part of the City & Suburban Railway between Hyattsville and Laurel, and the extension of the Columbia Railway to Kenilworth. The plant is to cost about \$350,000. Its construction is to begin immediately. Work on the line has been in progress for some time.

Railroad Notes.

The Southern Pacific's handsome new passenger station at San Antonio, Texas, is expected to be finished within three months.

An equipment mortgage is recorded in Oklahoma by the St. Louis & San Francisco Railroad Co. It includes thirty engines, besides passenger and freight cars. The amount of the mortgage is \$1,543,526.

Mr. J. T. Blair, president, writes to the Manufacturers' Record that the Parkersburg Bridge & Terminal Railway Co. was organized for the purpose of bridging the Ohio river and connecting the Zanesville, Marietta & Parkersburg and Little Kanawha railroads, of which he is also president, and for terminals in Parkersburg.

Mr. J. M. Carpenter writes to the Manufacturers' Record from Galetton, Pa., saying that a company in which he is interested has 42,000 acres of land in Monroe county, Tennessee, but that it has not as yet fully decided when to develop the property, although preliminary surveys are being made for a railroad. This line will, it is understood, be about twenty-five miles long, connecting with the Southern Railway at Maryville in Blount county.

TEXTILES.

[A complete record of new textile enterprises in the South will be found in the Construction Department.]

Correspondence relating to textile matters, especially to the cotton-mill interests of the South, and items of news about new mills or enlargements, special contracts for goods, market conditions, etc., are invited by the Manufacturers' Record. We shall be glad to have such matter at all times, and also to have any general discussion relating to cotton matters.

A \$100,000 Addition.

The management of the Standard Cotton Mills, Cedartown, Ga., has for some time past been contemplating the establishment of an additional mill which should utilize the lower grades of cotton. Wm. Parker, the company's manager, has returned from a trip to Boston, and states that while in that city he placed the order for this additional plant. The additional building required will be 75x300 feet in size, and its equipment will manufacture the coarse number of yarns, the output each week to be about 20,000 pounds. This important addition will enable the cotton-growers in the vicinity of Cedartown to dispose of their crop at acceptable prices, whereas heretofore there has been no local demand for coarse grades. The Standard Cotton Mills' present plant has 12,500 spindles and manufactures extra carded double-woven mule-spun hosiery yarns. It is capitalized at \$100,000.

The Drayton Mills.

The Drayton Mills of Spartanburg, S. C., which was reported at some length last month, is now laying the foundation for its building. It has been decided that 12,440 spindles and about 360 looms will constitute the principal textile equipment, and that fine goods shall be manufactured. P. J. O. Smith is the contractor for the buildings, and, as stated several weeks ago, the main structure will be three stories high, 150x205 feet; the power-house will be 67x106 feet. Arch B. Calvert has been elected president. The company is capitalized at \$250,000.

Will Add 6000 Spindles.

An addition of 6000 spindles will be made by the Harriet Cotton Mills of Henderson, N. C. The management has just decided upon this enlargement, and probably about \$100,000 will be expended. This new machinery will utilize the remaining space in the present building and make use of the surplus power. The company is operating 10,500 ring spindles in the production of hosiery yarns, and has been manufacturing just twelve months. Last week it declared a dividend of 3 per cent., and finds its prospects warrant the additions noted herein.

Textile Notes.

United States Consul J. F. Monaghan writes that there is no question that American manufacturers of cheap cotton half-hose can find a market for their products if the combination of colors which the Oriental people desire is carefully provided for.

John T. Whitehurst and associates have incorporated Whitehurst Belting Co. at Baltimore, Md., with capital stock of \$125,000. They have recently established plant for manufacturing belting direct from raw cotton, and claim that in weaving it stretches the cotton duck so that the finished belt is absolutely non-stretching.

Brookside Mills of Knoxville, Tenn., has let contract to Flynt Building & Construction Co. of Palmer, Mass., for the construction of additional building to accommodate its increase of 26,000 spindles and 650 looms. This will double the plant, and full particulars regarding the exten-

sive betterments were presented last month.

Ware Shoals Manufacturing Co. has begun the development of its extensive water-power near Laurens, S. C., and will push the work as rapidly as possible. It is also laying off the ground and preparing to build its mill of 25,000 spindles, previously reported as to be located to utilize the power. Messrs. W. B. Smith Whaley & Co. of Columbia, S. C., are the engineers in charge.

Application has been made to charter Southern Manufacturers' Mutual Insurance Co. of South Carolina for enabling its members to insure each other against loss by fire and other casualties. All the prominent mill men of the State are interested, and many of them are numbered among the incorporators. Messrs. Ellison A. Smyth of Pelzer, S. C.; Jas. L. Orr, L. W. Parker, F. W. Poe, J. H. Morgan and O. P. Mills of Greenville, S. C.; T. C. Duncan of Union, S. C.; J. A. Broek of Anderson, S. C., and others are named. In South Carolina a 60 per cent. valuation of the cotton-mill property amounts to nearly \$18,000,000, divided among twenty-eight counties. It is therefore evident that a mutual company has an eligible field for success.

Cottonseed-Oil Notes.

The stockholders of the Marion Cotton Oil Mill Co. of Marion, S. C., have voted to increase the capital stock from \$20,000 to \$30,000.

The Cotton Oil & Fiber Co., located on the Eastern branch of the Elizabeth river at Norfolk, Va., is now running day and night to keep up with its orders.

The cottonseed market opened last week at Lockhart, Texas, at \$10 per ton, the first purchase being made by a representative of the Southern Cotton Oil Co. of Houston, Texas.

The Sunset Delinting & Cotton Oil Co., Limited, is about being organized at Sunset, La., with a capital stock of \$100,000. A meeting of the stockholders will be held this week to elect its officers and board of directors.

The Transatlantic Trading Co. of Galveston, Texas, reports the clearances of cottonseed meal from that port for the month of July at 4510 tons, and of cottonseed cake 5895 tons, making a total of 10,405 tons.

The Dunn Oil Mills Co. of Dunn, Harnett county, North Carolina, was incorporated last week, with a capital stock of \$22,000, and the right to increase to \$200,000. The incorporators are J. D. Barnes, E. F. Young and M. T. Young.

Cottonseed products at Memphis, Tenn., on the 12th inst. were quoted as follows: Off crude oil, 31 to 33 cents; prime summer yellow, 38½ to 39½ cents; prime cottonseed meal, \$23 per ton; cottonseed by rail and river, \$15; linters, per pound, 2½ to 3 cents.

It is stated that Messrs. S. C. McCandless, M. V. McKibben and W. H. Mallet, all of Jackson, Ga., have been interested recently in the establishment of a delinting plant at some point in Texas, and have decided upon Houston as the point for the erection of the plant. The committee at Houston in charge of the enterprise is negotiating for buildings.

It is stated that Mr. Fred Oliver, manager of the large plant of the Virginia-Carolina Chemical Co. at Charlotte, N. C., has resigned his position with the company, and will move to Norfolk, Va., where he and his brother, Mr. John Oliver of Atlanta, Ga., have already begun the building of a \$500,000 plant for delinting cottonseed and refining cottonseed oil.

Arrangements were perfected last week for the establishment of a cottonseed-oil

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factory at East St. Louis to cost \$125,000. The plant will be located near the National Stockyards, and after the oil has been extracted from the seed the waste will be used for feeding cattle. It is stated that the enterprise is backed with Texas capital, W. E. Singleton of Fort Worth being at the head of the company.

The stockholders of the North Mississippi Oil Mill held a meeting last week at Holly Springs, Miss. Reports of the year's operations of the plant were submitted, and were received with much satisfaction. The following directors were elected for the ensuing year: John E. Anderson, president; B. S. Hull, vice-president; J. C. Levy, J. C. Totten, R. Shumaker, G. W. Armstrong, Morris Blumenthal, and Addison Craft, secretary and treasurer.

The following quotations were made on cottonseed products by Galveston exporters on the 11th inst.: Cottonseed oil in barrels, prime refined, 43 cents; off refined, none offering; prime crude, loose, f. o. b. Texas mills, 35 cents; prime crude, August-September, 31 cents; prime crude, September, 30 cents; prime cottonseed cake, f. o. b. Galveston, September-October, \$22; October-December, \$21.50; prime cottonseed meal, September-October and October-December, \$22.

It is reported that the Independent Refining Co. of Charleston, S. C., has secured control of the refining plant of the Southern Cotton Oil Co. in that city, and will in future control the affairs of the company. The Independent Refining Co. has a capital stock of \$50,000. The officers of the company are Morris Israel, president; vice-president and general manager, Robert Keith Dargau; secretary and treasurer, L. S. Cohen. B. F. Taylor of Augusta will have charge of the refining department of the plant. The company will handle from 600 to 700 tank cars of oil during the season.

The following are the official quotations of cottonseed and cottonseed products as posted at the New Orleans Cotton Exchange on the 12th inst.: Prime refined oil in barrels, per gallon, 41 cents; off refined oil in barrels, per gallon, 40 cents; prime crude oil, loose, per gallon, 33 cents; off crude oil, loose, per gallon 32 cents; prime cottonseed cake, per ton of 2240 pounds, \$28.50; prime cottonseed meal, per ton of 2240 pounds, \$26.50; lint, per pound—A, 3¼ cents; B, 3 cents; C, 2½ cents; cottonseed in sacks delivered at New Orleans, per ton of 2000 pounds, \$15; in bulk delivered at New Orleans, per ton of 2000 pounds, \$14.

At a meeting last April in Dallas, Texas, the Interstate Cottonseed Crushers' Association appointed a special committee, of which Mr. G. N. Henson of Chattanooga, Tenn., was appointed chairman, to formulate plans for a mutual insurance company for the cottonseed-oil men of the South. This committee met last week at New Orleans and agreed upon the general character of the company and adopted by-laws. The by-laws adopted will be recommended to the stockholders of the proposed insurance company. It is promised to capitalize the company at \$200,000, with a surplus of \$100,000. The work of organization will begin as soon as \$100,000 is paid in. A copy of the by-laws and prospectus will be sent to each of the 500 mills in the association, located all through the cotton States, and the mill men will be asked to take stock in the proposed company. As soon as the prescribed amount of stock is taken up organization will begin and the stockholders will decide upon the location of the home office.

Subscribe to the Manufacturers' Record, Price \$4 a year, or six months for \$2.

PHOSPHATES.

PHOSPHATES OF ARKANSAS.

An Expert Points to Their Opportunities for Industry.

In a letter to the Manufacturers' Record Director R. L. Bennett of the Arkansas Experiment Station at Fayetteville, writes:

"The locality in which the important rock phosphate deposits occur in Arkansas is in the northern part of the State, and is embraced in the counties of Independence, Stone, Izard, Searcy, Marion, Baxter and Newton. These deposits have been but little known, and have attracted but little attention until very recently, when two railway systems began constructing lines through different parts of the region. The topography of the country is mountainous, the valleys having been formed by erosion, and the rock strata, which are mainly horizontal, outcrop on the sides of the hills.

"The phosphate deposits are confined to a definite horizon, and while this horizon is to be found in the counties mentioned, deposits of phosphate rock are not so continuous and are only found in certain localities. The phosphate rock occurs at the Devonian interval, the same as that in Hickman county, Tennessee, and specimens of the rock from some of the outcrops are identical in appearance to some of the Tennessee phosphate rock. The richness of the beds in calcium phosphate and the thickness varies in the same way as that in Tennessee. Calcium phosphate in different beds varies from 50 to 75 and 80 per cent., and from a few inches to several feet in thickness.

"Development of the deposits has already begun at one point above Batesville, and an acid phosphate plant is in operation, owned by the Arkansas Phosphate Co.

"With the extension of railway transportation facilities other companies will enter the field in the manufacture of acid phosphate.

"Mining of the phosphate rock can be easily and cheaply done in the beginning by simply quarrying the rock on the sides of the hills, then by tunneling. There is an abundance of hardwood timber and running water for mining purposes. The region is high and healthful. At the present time parties interested in mining the rock can obtain land at very low prices, as it has not yet been bought up by speculators.

"The deposits in a considerable area of the region have been examined by competent geologists, and chemical analysis made of the rock from different outcrops, and the deposits promise to be of great importance. Copies of the report of the survey published by the Arkansas Experiment Station can be had on application."

As to Florida Phosphates.

Among the numerous industries of the South, none perhaps calls for greater attention and care in the methods of prosecution and preparation for placing its output upon the market than that of phosphate rock. The character of prominent companies engaged in the development of the American phosphate field since the inception of the industry has been of undoubted calibre, while the product in the foreign market ranks first in production and analysis. The Manufacturers' Record, with its usual interest in Southern development, has had its attention drawn to recent attacks by a foreign journal claiming to be a German organ in the interests of the phosphate industry. In its issue of May 9, 1902, it has the following: "Apparently the cheapest phosphate is Florida land pebble, which is said to have been offered at 4¼ c. i. f. In spite of this

low price, neither the German nor the English manufacturers will touch this material, seeing it is almost useless to them, owing to its mechanical composition. The Algerian and Tennessee people are therefore quite right not to take this material into consideration when fixing their prices, although the sellers praise it loudly enough as a substitute for Algerian phosphate. Anyhow, this inferior pebble is in existence, and must be sold. The importing manufacturers ought therefore to be sure and protect themselves against receiving it indirectly, which can be done by buying from first-class firms only, which guarantee their phosphate to be hard rock, and where it is quite out of the question that pebble is joined to the rock." The implication of the above journal that land pebble shipments have gone forward in irregular consistency is too ridiculous to entertain. First of all, the shippers of land pebble are men of established character in the commercial world both at home and abroad, and employ no irregular methods to prosecute their business. Second, their relations with their foreign consignees are of such a character as to preclude the possibility of even disturbing for a moment the commercial intercourse which has been under cultivation during the years of vicissitude and danger in the world's markets. Third, the German buyer of hard rock and pebble is noted for his remarkable knowledge of phosphate analysis, and is one of shrewd methods, so that it is certainly remarkable that mixed cargoes should pass inspection at a German port or that land pebble and hard rock joined should be sold for Florida hard rock. Fourth, the German and English manufacturers continue and will continue to "touch this material," as will be seen from the following shipments of land pebble going forward from Port Tampa for the years 1900, 1901 and first three months of 1902:

	1900.	1901.	Three months of 1902, January to April.
Germany.....	4,528	7,504	8,849
England.....	8,521	10,565
France.....	33,810	32,256	2,484
Italy.....	23,470	28,687	3,812
Sweden.....	11,462	16,897	7,693
Japan.....	8,293	13,415
Australia.....	4,318	4,267	2,496
Total tons.....	94,312	112,611	25,334

The magnificent distance of the editor of the above journal from the point of production and the inexperience and ignorance of correspondents in misinforming the public, it is to be hoped, will not be allowed to retard the progress of development of a journal claiming to publish only facts in the interest of the world's phosphate industry.

Phosphate Markets.

Office Manufacturers' Record,

Baltimore, Md., August 13.

The local phosphate market continues quiet, with no disposition on the part of fertilizer men to add to their holdings at present. The offerings are generally light, and no actual sales are reported during the past week. Among the charters reported are the steamer Norman Isles, 2190 tons, from a Southern port to the United Kingdom or Continent with phosphate rock on private terms, and British bark Earl Derby, 961 tons, from Pisagua Range to Hampton Roads for orders with nitrate at 18/9, option Savannah direct 18/9. The advices from Southern points of production are in most cases favorable for about an average output during the present year, and shipments from the ports for July were liberal. The work of development in mining sections is being pushed with considerable enterprise, and in Florida the land-pebble business has been unusually good for July in the way of shipments. The supply in the Florida territory, which is claimed by some companies to be

large, is likely to prove disappointing, as deposits of pebble rock are much less prolific than have been estimated. In the Tennessee field considerable work is being done in the Mt. Pleasant district. Stocks above ground are said to be light, and orders for future delivery good. The domestic demand is moderate, while the foreign business is better than usual. South Carolina rock continues very steady as to value, and those now at work in the mines report a fair volume of business for the month of July, and anticipate filling several foreign orders during the present month or early September.

Fertilizer Ingredients.

The ammoniate market is fairly active, and values very steady. Buyers are more interested, and from Eastern sources there has been some demand during the past week. Holders are firm in their views, as stocks in the West are limited. Sulphate of ammonia is very strong at a slight advance for future delivery. Nitrate of soda is about steady. Blood has been advanced, and concentrated tankage is firm at higher figures.

The following table represents the prices current at this date:

Sulphate of ammonia (gas)....	\$2 90 @ 2 95
Nitrate of soda, spot Balto....	2 10 @ 2 15
Blood	2 40 @ —
Azotine (beef).....	2 40 @ 2 45
Azotine (pork).....	2 40 @ 2 45
Tankage (concentrated).....	2 20½ @ 2 22½
Tankage (9 and 20).....	2 37½ & 10 @ 2 40 & 10
Tankage (7 and 30).....	21 00 @ 21 50
Fish (dry).....	27 50 @ 30 00

Phosphate and Fertilizer Notes.

The shipments of phosphate rock from Port Tampa, Fla., for the month of July amounted to 46,685 tons, and for the seven months ending July 31 shipments aggregated 243,655 tons.

It is stated that the Sumner Phosphate Co. has resumed operations at its mines north of Gallatin, Tenn., and D. B. Anderson & Co., the contractors, have a large force mining rock and preparing it for market.

The Ringold-Reinhart Company of Cumberland, Md., has been incorporated for the purpose of carrying on a wholesale and retail drug business. The capital stock is \$100,000. The incorporators are Rowland C. Ringold, Edward L. Reinhart, R. Lucien Reinhart, Lionel G. Skillman and F. Brooke Whiting.

The E. H. & J. A. Meadows guano warehouse at New Bern, N. C., which was recently destroyed by fire, is being rebuilt. The new building will be a double-story, 273 feet long, extending from the mill to the Neuse river east. The width of the first floor will be sixty-three feet. The storage capacity of the first floor will be about 21,000 tons.

It is stated that Mr. Mark T. Cox, banker, of New York city, is completing arrangements to begin the construction of a zinc smelter and sulphuric acid plant at Beaumont, Texas. Mr. R. R. Rust of New York will be local manager for the next few months, and Mr. Joseph Keller of Joplin, Mo., will be local superintendent of the construction work. It is reported that \$1,000,000 will be invested.

The new fertilizer law passed by the last general assembly of Georgia, which raises the standard of fertilizers which can be sold in that State, will not go into effect at present, but will begin to operate on and after October 1, which is the beginning of the new fertilizer season. The new law affects about sixty factories which do business in Georgia, selling annually about 500,000 tons of fertilizers at an average price of \$15 per ton, or about \$7,500,000. One of the principal requirements of the new law is that no fertilizer shall be sold in the State which contains less than 12 per cent. of plant food. Now it is sold from 1 to 2 per cent. less.

LUMBER.

[A complete record of new mills and building operations in the South will be found in the Construction Department.]

LUMBER MARKET REVIEWS.

Baltimore.

Office Manufacturers' Record,
Baltimore, Md., August 13.

A fairly active demand for lumber prevails at the moment in nearly all avenues of the local lumber industry. The buying has been much better during the past week, and indications point to considerable business in the late summer and early fall months. The carpenters' strike being ended, causes considerable stir among builders, and a large quantity of material will now go into consumption at once for projected improvements. North Carolina pine is still in good demand, and although not so urgent as sixty days ago, there is a good substantial inquiry for most grades. The list of values continues very steady, and stocks show no great accumulation at any milling point. Cypress and hemlock are moving freely, and values continue steady, with a fair supply. White pine is in moderate demand, and values firm, with stocks ample for all requirements. In hardwoods the demand is fairly active, and values about steady, while stocks at milling points are better assorted. The foreign export trade in hardwoods continues unchanged, and advices from European ports report markets quiet and unsettled.

Charleston.

[From our own Correspondent.]
Charleston, S. C., August 11.

Shipments of lumber during the past week have been much heavier than usual, and the whole tone of the market is better. There is a good inquiry for both pine and cypress lumber, and at all nearby milling sections the output is above the usual cut at this season of the year. The cross-tie industry possesses more encouraging features, and several large orders are now being got ready for shipment. In the list of values nearly all grades and dimensions are very steady in tone, and buyers and sellers are closer together in their views. The movement at Georgetown is very active, all the mills reported as running at their full capacity, with shipments good and the outlook for future trade encouraging. At interior points the hardwood industry is increasing in importance, and the rich sections of virgin forests are being rapidly developed. Sales of hardwood timber lands are constantly reported, and at prices showing considerable appreciation over former sales. During the past week 4,133,987 feet of lumber left this port, of which 2,623,750 feet went to New York, 1,375,000 feet to Philadelphia, 45,237 feet to Boston and 90,000 feet to Kingston, Jamaica. The total shipments of lumber from this port from September 1, 1901, to August 8, 1902, amounted to 77,967,543 feet, of which 2,574,000 feet were foreign and 75,393,543 feet were coastwise. During the same period in 1900-1901 the shipments aggregated 48,096,312 feet, of which 888,000 feet were foreign and 47,208,312 were coastwise. The offering of desirable vessels for carrying lumber is light, the only charters reported being the schooner J. B. Manning, 955 tons, from Charleston to New York with ties out of water at 17 cents, and schooner E. A. Scribner, 350 tons, from Charleston to Saybrook and Hartford, Conn., with lumber on private terms.

Savannah.

[From our own Correspondent.]
Savannah, Ga., August 11.
The absence of sailing vessels from this

port recently has caused a quieter tone in lumber circles, and few vessels are arriving at Southern ports with coal cargoes, which generally take back lumber. Now that coal is scarce, few schooners are offering, and the bulk of freights goes to steamers. The demand for lumber, however, continues good, and from Northern sources orders continue to be received as usual. Reports from milling sections in the interior are favorable, and saw-mills generally are actively engaged on orders for prompt and near future delivery. Quotations on lumber are generally firm at the following figures: Minimum easy-sized yard stock, \$14.50 to \$15; car sills, \$16 to \$19; ship stock, \$23; sawn ties, \$12 per 1000; hewn ties, 7x9x8½, 40 cents each; switch ties, \$12.50. The month of July was one of considerable activity in lumber circles at nearby Georgia ports. In the Brunswick section the shipments, both coastwise and foreign, were liberal. The foreign shipments amounted to 2,415,000 feet, valued at \$46,132. The foreign business is improving as the season passes, and the estimates for the present month are largely in excess of July. It is stated that J. J. McDonough, a large lumber manufacturer, has bought the Aiken planing mill at Brunswick and will equip and greatly enlarge its capacity. There is a great demand for dressed lumber at the moment, and the six planing mills which are now running at Brunswick have all they can do to fill their orders. The business at the port of Darien is fairly active for lumber and timber, the foreign exports for July amounting to 3,236,000 feet, valued at \$39,000. There is a very light offering of desirable vessels seeking lumber cargoes, and the only charter reported last week was the schooner Carrie E. Look, 457 tons, Savannah to Portland, Maine, with lumber at \$6.25.

Mobile.

[From our own Correspondent.]
Mobile, Ala., August 11.

The timber trade at the moment is rather quiet, as stocks are light and prices for sawn timber away above the views of exporters, who are rather indifferent, preferring to await a change in conditions. Timbermen are asking 17 to 17½ cents per cubic foot for sawn timber, and as shippers are not disposed to pay these prices, the movement is light. Last sales of sawn timber, 30-foot average, were at 16½ cents per cubic foot. The stock of hewn timber is light, with sales last week at 15 to 16½ cents per cubic foot. Foreign advices continue to show no actual improvement, and markets are generally quiet. The London Timber Trades Journal of the 2d inst., in notes of the week, has the following: "The week has passed without any special features to single it out from the ordinary run of business. Timber merchants generally are becoming alive to the shortness of stocks at the great supplying centers, and this has exercised a strong reviving influence on the languishing tendencies of the buying spirit of the trade. Inquiries for deals are plentiful, but the difficulties in the way of supplying suitable specifications at the shipping ports confine f. o. b. operations within a comparative narrow area. The London market, which affords the best reflection of spot business, continues somewhat dull, apart from the usual activity at the docks that always attends the height of the import season. The loss to the trade caused by the postponement of the coronation last month is still making itself felt at the consuming points, and is accountable for the present languor now visible in the wholesale market." Receipts of logs at Mobile are somewhat improved, and stocks in the upper rivers are very large, and are only

awaiting a rise to bring them out. The lumber trade is in fair shape, while the interior demand is not excessive. There is a good demand for kiln-dried saps, and prices are firm, with an upward tendency. Indications point to a good trade with the United Kingdom and continental ports during the fall and winter months. During the past week the following shipments went forward: Steamer Amstel for Dordrecht, Holland, with 151,528 cubic feet of sawn timber; schooner Phillips for Cienfuegos, Cuba, with 77,522 feet of lumber; schooner Morse for Dalquiri, Cuba, with 510,780 feet; ship Ruby for Buenos Ayres, A. R., with 989,336 feet; schooner Frederick for Grand Cayman with 53,000 feet; steamer Telephone for Progreso, Mexico, with 120,000 feet, and schooner Ethel for Boston, Mass., with 501,768 feet. The total shipments of lumber from this port since September 1, 1901, aggregated 93,575,605 cubic feet.

Lumber Notes.

The Southern Lumber Co. of Ashpole, N. C., has been incorporated, with a capital stock of \$30,000. The incorporators are A. L. Jones, J. D. Rush and R. B. Raynor.

The schooner George H. Phillips, which sailed from Mobile on the 3d inst. for Cienfuegos, Cuba, with 77,522 feet of lumber, went ashore on Dixie's Island, and may prove a total loss.

The lumber-yard of W. T. Wilcoxson, near Horatio, Ark., was destroyed by fire last week. The saw-mill and some lumber were saved. The loss is estimated at \$6000, with \$5000 insurance.

The planing mill and dry-kiln of the Spring Hill Naval Stores & Lumber Co., recently destroyed at Spring Hill, Fla., are to be rebuilt shortly. The company will add to the new plant a sash, door and blind factory.

A fire occurred last week at the saw-mill of Cruise & Splawn, three miles from Centerville, Ala. The fire started in a dry-kiln and destroyed a large amount of lumber. The loss is estimated at \$30,000, with no insurance.

Messrs. Stevens & Son, proprietors of the Chesterfield Lumber Co.'s mill of Chesterfield, S. C., which was destroyed by fire two weeks ago, will rebuild their plant. The loss sustained by the destruction of their plant was not heavy.

The plant of the Brownlee Lumber Co. at Meridian, Miss., was destroyed by fire on the 8th inst. The plant was valued at \$12,000, and insured for \$4500. The company manufactured telegraph and telephone cross-arms. The plant will be rebuilt at once.

The Bailey Manufacturing Co. of Elkin, N. C., has been incorporated, with a capital stock of \$25,000, for making insulator pins, furniture and novelties. The incorporators are E. T. Bailey of New York, D. W. Bailey, George Bailey and W. M. Bell of Elkin.

The Southern Pine & Cypress Co. of Houston, Texas, has been chartered, with a capital stock of \$50,000. The company will manufacture pine, cypress and other lumber and shingles. The incorporators are J. B. Thomas, I. A. McFarland and H. F. McFarland.

The Longview Crate & Woodenware Manufacturing Co. of Longview, Texas, has been chartered, with a capital stock of \$10,000. The company will manufacture all kinds of woodenware. The incorporators are J. R. Castleberry, G. T. Reynolds and C. W. Lawrence, all of Longview.

It is stated that during the month of July 320 cars of lumber left Orange, Texas, by the Southern Pacific Railway,

while the Orange & Northwestern handled 213 cars, making a total of 533 cars for the month, against 907 cars in July, 1901. Water shipments for July were light compared to July, 1901.

The shipments of lumber from the port of Mobile last week amounted to 2,252,406 feet to Cuba, South America, Mexico and Northern ports. The total shipments of lumber since September 1 aggregated 93,675,605 feet. The steamship Amstel cleared from Mobile for Dordrecht last week with 151,528 cubic feet of sawn timber.

The Acme Tea Chest Co. has begun work on another cargo of sweet-gum logs, which it expects to have ready for shipment from Wilmington, N. C., to Glasgow, Scotland. Nearly all the sweet-gum timber on the Cape Fear river has been purchased by an English syndicate. After shipment to Glasgow the logs are vended for tea chests.

The Excelsior Lumber Co. of Valley Bend, W. Va., has been chartered, with a capital of \$10,000, of which \$4200 has been subscribed. The company will manufacture all kinds of lumber. The incorporators are Reed Bigley, Racine, Ohio; C. J. Koehler and H. E. Koehler, Pomeroy, Ohio; J. P. Jones and Jacob Chapman of Minersville.

J. W. Hambrick of Huntingdon, W. Va., with a number of other capitalists, has purchased the interests of the Lombard Clay Lumber Co. at Lombard, Ky. The deal includes 6500 acres of the finest timber land, including walnut, oak and poplar, and ten miles of logging railway running into the mountains and connecting with the Louisville & Nashville Railway.

The Little Rock Cooperage Co., with plants at Little Rock and Texarkana, Ark., has purchased the cooperage plant of the Merchants & Planters' Oil Co., with seven acres of ground, at Houston, Texas, and will begin work at once. The present capacity of the plant will be 800 barrels a day, employing 125 men. Next year the output will be increased to 1200 barrels a day.

A meeting of the stockholders of the Gunpowder Lumber Co., recently incorporated at Parkton, Md., with a capital of \$5000, was held last week, when the following officers were elected: President, Dr. R. R. Norris; vice-president, Mr. Samuel W. Webb; secretary-treasurer, Mr. A. A. Sparks; assistant secretary-treasurer, Mr. J. W. Ayres, and manager, Mr. Arthur Arnold.

The following shipments of lumber were reported last week from Charleston, S. C.: For New York schooners Lizzie M. Parsons 600,000 feet, Van Name & King 590,000 feet, Nelson E. Newberry 560,000 feet, Charles C. Lester 250,000 feet, D. Howard Spear 450,000 feet, and steamer Arapahoe 131,543 feet; for Boston, steamer New York 12,234 feet and steamer Carib 33,033 feet, and for Philadelphia, steamer S. T. Morgan 1,375,000 feet, making a total of 4,001,810 superficial feet.

Plans are making for the incorporation of the Savannah Dry-Dock & Shipbuilding Co., with a capital stock of \$600,000, which proposes as its first work to construct a dry-dock in the harbor of Savannah. The incorporators named are Messrs. Herman Myers, W. W. Mackall, George J. Baldwin, John Flannery, J. H. Estell and J. P. Williams.

Official reports of government geologists show that there are 62,000 square miles of coal-bearing lands in the Eastern States of Australia containing available coal amounting to 240,448,053,000 tons.

MECHANICAL.

Overhead Conveying Machinery.

Everyone has seen the overhead cash systems at work in the big department stores. Some of these are very elaborate, some less so—all are labor and time-saving devices.

On a far greater scale, saving labor and

of molasses and the thousand and one products for which the South is year by year becoming more and more a factor in the world's commerce could be facilitated and productive capacity increased by a complete installation of conveying and elevating machinery.

The United States government has been quick to appreciate the advantages of these systems. The guns on her men-of-

installed. It is ball-bearing throughout, reducing friction and noise as far as possible.

In the second illustration is shown a vertical conveying and unloading system for handling bags, boxes and barrels. Gun emplacements in the United States Army are using especial modifications of this for hoisting ammunition.

There are a number of very successful

The No. 2 huller has a cylinder twenty-one inches in diameter and seventeen inches long. It has seventeen cylinder knives and thirty stationary or concave knives; capacity forty tons of seed per day of twenty-four hours.

The cast-iron sides are unusually heavy, being an inch thick, besides being ribbed all around. There are two heavy cast-iron cross-girts, accurately fitted to place, and a heavy ribbed angle brace extending entirely across the bottom. It is therefore impossible for this frame to get out of line and thus cause hot bearings and binding of the cylinder at the ends.

A part of the side is built up square at the top, so that a feeder or a spout may be set flat on it.

The cylinder, which is carefully cast from the best iron, is first accurately bored out and keyed to the shaft, is then put in the planer, centered on the shaft and planed all over to a template. It is most carefully balanced before the knives are attached.

The cylinder of the No. 2 huller is made with a heavy center flange, like a web pulley, and is turned in the lathes on the inside, so that it is machined all over, and is thus in perfect natural balance.

Both hullers have the same size shafts, namely, three and three-sixteenths inches through the cylinder and two and fifteen-sixteenths inches in the bearings. This is said to be heavier than any other huller built.

This huller has a shell bearing, lined with babbitt and solid all around, making a true, long, ring-oiling, solid-shell bearing, held by clamp boxes to the machine. In a huller such as this, with shell bearings, only the shell must be repaired or replaced because of accident or wear.

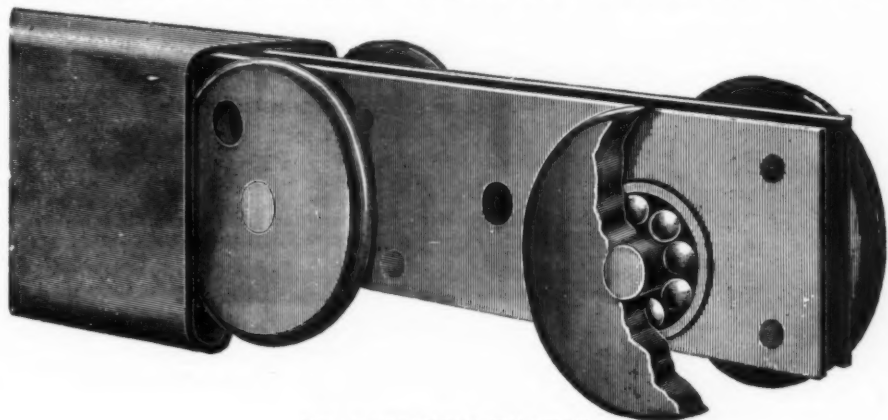


FIG. 1—OVERHEAD TRAMWAY.

time on a scale increased a hundred times, is the modern system of overhead tracking, conveying, carrying machinery and traveling cranes.

Because the first cost in some instances to some manufacturers seem great, these hesitate to install, not seeming to realize that the entire cost of installation is soon saved in lessened labor to be paid for and fewer men to be paid.

One man with a perfect overhead system can carry from one end of the shops to

war are fed by automatic ammunition hoists; her cold-storage plant in the newest of her possessions, the Philippine Islands, is fitted with a very elaborate overhead trackage system, using 1000 trolleys, 25,000 feet of track, 1000 ball-bearing switches and 20,000 regular meat hooks. Uncle Sam is usually slow in accepting inventions on which the mark of time has not been fully stamped, but is quick to embrace obvious improvements over old methods, as in this case.

manufacturers of these systems doing excellent work in this country. Among these the New Jersey Foundry & Machine Co., 9-15 Murray street, New York, has been exceedingly successful. The installation referred to above, in the Philippines, put in by this company, has given perfect satisfaction, as, in fact, have all the systems installed by it.

The Tompkins Cottonseed Huller.

The D. A. Tompkins Company of Charlotte, N. C., has a new foundry and new

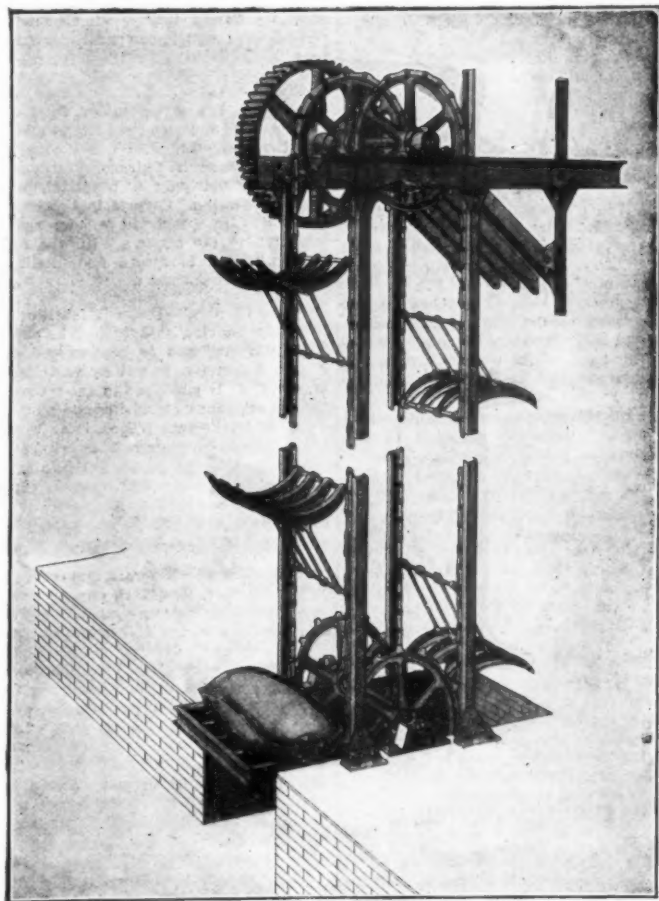


FIG. 2—VERTICAL CONVEYING AND UNLOADING SYSTEM.

the other pieces which, without the system, a score of men might handle with the utmost difficulty.

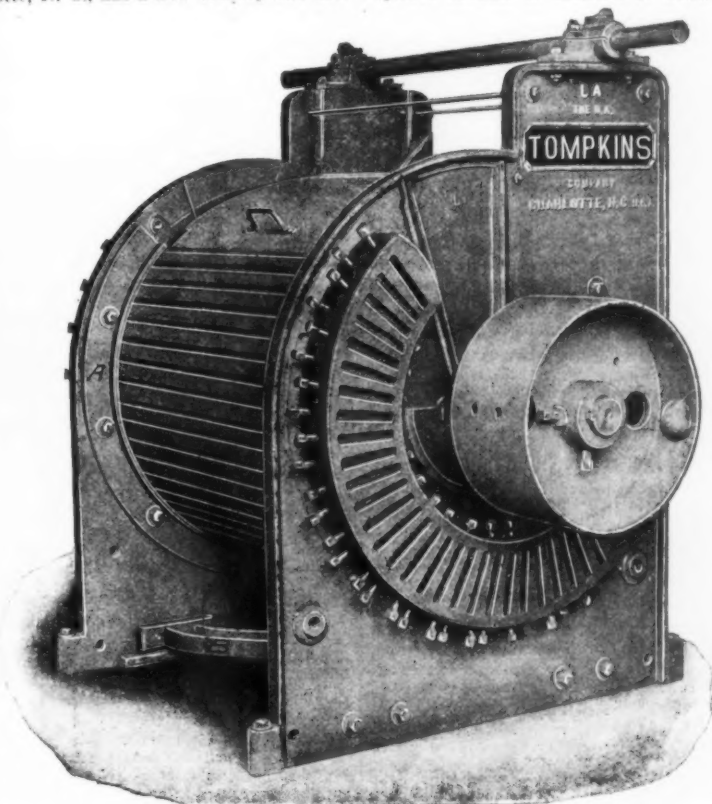
Many manufacturers have realized these advantages, and are installing or have installed complete systems in their factories, mills and plants.

In the South these systems are less in use than further North. The handling of bales of cotton, bags of rice, hogsheads

Two half-tones are reproduced here for the purpose of illustrating this article. The first of these shows a patent carrying device or overhead tramway for use in mines, foundries, machine shops, etc. It is a safe, practical and labor-saving overhead appliance for moving and handling all kinds of materials. It is a very easy and convenient device to apply to any building where overhead tracking is to be

machine shops. It has been handling oil-mill machinery and building complete oil mills for many years. It is now building this machinery in its own shops, including a very fine cottonseed huller, built in two sizes.

The No. 1 machine has a cylinder twenty-one inches in diameter (measured over the knives) and thirty inches long. It has seventeen cylinder knives and thirty stationary or concave knives. It is capable of working 100 tons of seed in twenty-four hours, and is suitable for mills of from 40 to 100 tons capacity.



IMPROVED COTTONSEED HULLER.

In this huller the staves inserted between the concave knives to steady them are held in place by cast-iron rings bolted to the sides. This is a very neat arrangement, and adds to the appearance of the machine.

In every respect this huller of the D. A. Tompkins Company is an up-to-date machine, operating smoothly and without hitch.

Millett Patent Core Oven.

For fourteen years the "Millett" patent core oven has been in use, and for four-

teen years has successfully met the varied requirements demanded of it.

The "Millett" oven has features of especial interest and especial value.

It unquestionably saves its first cost in a comparatively short time by the saving of fuel which it effects.

Delicate cores are not damaged by the sliding in and out of core pans. The cores swing smoothly in and out on shelves provided with double doors; no jar, no damaged cores; the back door closes the oven when the tray swings out, as shown in the illustration, and the heat is



MILLETT PATENT CORE OVEN.

retained where it belongs, in the oven, instead of pervading the surrounding atmosphere. This device is simple and effective.

There are usually from four to eight five-inch shelves and one ten-inch shelf in these ovens, permitting the handling of practically any sized core.

These ovens have been in use, it is said, for years by the United States navy, the Westinghouse Company all over the world and by business firms almost as well known—conclusive evidence of their merits.

The "Millett" patent core oven is manufactured exclusively by the Millett Core Oven Co., Brightwood, Mass.

TRADE NOTES.

Change of Secretary.—Mr. Samuel R. Nuzum has been elected to fill the vacancy on the Fairmont (W. Va.) Board of Trade caused by the recent death of Mr. Brooks, former secretary.

Change of Address.—Mr. R. E. Watson, Atlanta, Ga., dealer in coal and iron properties especially, and Southern investments generally, has moved from former offices in the Austell Building to 401-2 Empire Building.

Sales from the Hicks Works.—The Hicks Locomotive and Car Works, 277-285 Dearborn street, Chicago, has recently taken the following orders for rebuilding: One theatrical car, forty flats, one four-wheel switch engine and three baggage cars.

Sailed for Europe.—In order to make permanent arrangements with certain rail and structural mills for the large and increasing business of his firm in these lines, Mr. Justice Cox, Jr., of Justice Cox, Jr., & Co., Ltd., Philadelphia, sailed for Europe a week ago Saturday.

New York Representative.—Notice has been received to the effect that after August 25 Mr. William E. Dickey, 16 Murray street, New York, late of the United States Navy, will represent the Goulds Manufacturing Co., Seneca Falls, N. Y., and the West Point Boiler Works (R. Munroe & Son), Pittsburg, Pa.

Consolidation.—The Baltimore and the Maryland Engraving companies have consolidated, and are now under one management and one name. The Baltimore-Maryland Engraving Co., Baltimore, will carry on the extensive business of these two firms with the same excellence which has characterized the work of both heretofore.

Engine Sales.—The National Color Type Co., Chicago, is installing an electric plant for power and light. The engines will be furnished by the Ball Engine Co., Erie, Pa. The Joseph Dixon Crucible Co. is installing in its plant at Jersey City, N. J., a unit for electric-power service, consisting of a Ball engine direct-connected to a 100-kilowatt generator.

Appointed Sole Agent.—T. A. Budd, 610 Elliott Square, Buffalo, well known in engineering circles in Western New York through his

being formerly associated with several prominent manufacturing and engineering concerns, has been appointed sole agent for Western New York by the "We-Fu-Go" and "Scaffe" water-softening and purifying systems, which are manufactured only by Wm. B. Scaffe & Sons Co. of Pittsburg, Pa.

Change of Name.—The firm of Baxter D. Whitney of Winchendon, Mass., with a reputation for over sixty years of successful work in the production of fine woodworking machinery, announces that from this date the firm name changes to "Baxter D. Whitney & Son," under which name the same business methods that have made the old firm known throughout the country for honest dealings and honest workmanship will be continued.

Veneer Drying Machine.—It is a conceded fact that the perfect drying of thin lumber and veneers is a matter which has caused the veneer men much trouble and expense in the past. It is said few mills have a drying equipment equal to the cutting capacity. The new machine brought out by the Coe Manufacturing Co., Painesville, Ohio, is said to surmount many past difficulties. This machine is simple, durable, accessible, economical, practical and generally satisfactory.

Cotton Mill Sale.—On September 2, 1902, will be sold at auction for cash the entire property of the Tennille Cotton-Mill plant. This property consists of 26.4 acres of land, a main factory building of substantial brick construction, brick cotton warehouse and reservoir, tenement-houses, wooden office buildings and electric-light plant, with which the city of Tennille is lighted. It is valuable property, and offers an excellent opportunity for parties desiring profitable Southern investment. Address N. B. Corbin, special commissioner, Macon, Ga., for further information concerning this plant.

Saw-Mill and Timber Sale.—Because two estates are involved and a settlement demanded, an excellent opportunity to secure valuable standing timber and a complete plant for working it is now offered investors. This property may be leased or purchased, leased by preference. It is situated at the juncture of the Southern Railroad and the Atlantic Coast Dispatch, offering unusual shipping facilities. The plant has been in operation as a fruit and vegetable package factory, combined with saw-mill, dry-kill, etc. Judge W. S. Goodwyn, Emporia, Va., will furnish further particulars to interested parties.

Fine Drawings.—Morrison & Kindervater, mechanical engineers, 1103 East Main street, Richmond, Va., have been doing a very extensive business of late, which speaks for itself of the excellence of the work of this well-known firm. Messrs. Morrison & Kindervater have prepared themselves with every means of getting out all sizes and kinds of blueprints, and are in position to furnish on short notice blue, white and black line prints. All prints are carefully inspected, and none but the best work allowed to go out. This firm deals so heavily in papers that the freshest of supplies in this line are only used. All drawings are treated in strictest confidence, and especial attention is paid to mail orders.

Chandelier Factory.—The Charles Polachek & Bro. Co., 431 Chestnut street, Milwaukee, has recently closed some very large contracts; among these, one from Cleveland, one for fitting the Elks Lodge Building of Mobile, orders from Little Rock and Texarkana were the most important. The Polachek Company, whose specialty is the manufacture of gas and electric chandeliers, light fittings of all kinds, occupies two large three-story adjoining buildings. In the past twelve months its business has increased 75 per cent., and is still increasing. Only lately it has added its own foundry for the casting of chandeliers. For twenty-five years this company has been conducting a very successful business, covering at this time every quarter of Canada and parts of South America.

Towing Machines.—The government is slow in awarding medals for acts of heroism at sea, but not without reason, for its methods are thorough. Those deserving medals usually get them after all government requirements have been complied with. The loss of the Lake Michigan Car Ferry Transportation Co.'s ferries 3 and 4 on Lake Erie in one of the severe storms of November last and the rescue of the crews through the brave efforts of Capt. Frederick Johnson, who was in command of the tug Fisher, which had the barges in tow, until a short time ago had no recognition. Captain Johnson, who resides in South Chicago, only recently received a medal which was due him from the Treasury Department. It is a little late now to talk of the loss of these ferries,

but it would seem that all such craft should be fitted with steam towing machines and the strong wire cables that go with these machines. The two larger car ferries of this fleet, Nos. 1 and 2, are fitted with Shaw & Spiegle towing machines, but the vessels that were lost were not so fitted. The Shaw & Spiegle towing machines, made by the American Ship Windlass Co., Providence, R. I., have already received mention in these columns as life-saving and safety appliances of the highest order.

Notes About Schoonmaker Company.—The A. G. Schoonmaker Co. of 126 Liberty street, New York city, is conducting a very satisfactory and rapidly-increasing business. This company is the representative of the Eager Electric Co., Watertown, N. Y., prominent builder of direct-current apparatus. Among recent installations of Eager equipment may be mentioned those for J. H. Lebkuecher, Newark, N. J., six 150-kilowatt direct-current generators; the Analomink Paper Co., Water Gap, Pa., one 30-kilowatt direct-connected generator; the Black River Traction Co., Watertown, N. Y., three 200-horse-power direct-connected engine-type railway generators and one 50-kilowatt booster set. The Schoonmaker Company carries in stock at 126 Liberty street and at 133 Cedar street a full line of the Ward Leonard Electric Co.'s automatic starting boxes, all sizes, and a full line of smaller new motors in 220 and 300 volts. The shipment of rebuilt cars and motors is conducted from shops in Brooklyn. Among these may be mentioned a large vestibuled motor car for the Moline, East Moline & Watertown Railway Co., and several open cars for the East Bangor, Portland & Delaware River Street Railway Co. Several 150-ton hydraulic wheel presses have been shipped during the past month.

Zanzibar Anti-Rust Paint.—The Garfield Paint Co. of Cleveland, Ohio, although a young concern as compared with some of the better known paint companies, is achieving remarkable success, more especially on its brand of "Zanzibar Anti-Rust Paint." The paint is a fortunate discovery in the line of chemical investigation. It is of great brilliancy, and at the same time resists the action of the atmosphere to a remarkable degree. The base of the composition is carbonite, a resultant from the distillation and manipulation of coal tar. It is said to be as indestructible as graphite and as elastic as a piece of rubber. In its list of customers, some of whom, it states, have been secured through the good offices of the Manufacturers' Record, is named some of the leading manufacturers and largest concerns of the United States. Nearly all of the immense plants of the glass companies, some of the largest of the cotton-seed-oil companies, some of the best lines of railroad, many of the large iron manufacturers, and large manufacturers of cement in different parts of the country are especially prominent as the users of the "Zanzibar Anti-Rust Paint." This young company is also turning its attention with excellent success toward the manufacture of a line of color paints on a similar process. At the price at which these goods are held, quality considered, there can be hardly any question at all of immediate and rapid growth. The color paints mentioned have been on the market now for over two years, and all of the tests to which they were subjected have proved them to be of most superior value. While the colors are clear and striking, the lustre of the paints is particularly bright and pleasing, showing that the material of which it is made is full of life and resistance to the action of the weather. This company is exceedingly busy; in fact, its business seems to be pushing it almost as much as it is endeavoring to push its business. The size and importance of this company in the immediate future can hardly admit of question.

TRADE LITERATURE.

Light.—The Federal Manufacturing Co., 162-172 West Long street, Columbus, Ohio, manufacturer of gas and arc lamps, is sending out very attractive trade literature in the shape of a small catalogue of its latest and most improved gas arc lamps. This firm has been very successful in this line, and is doing very advanced work.

'Frisco System.—A little calendar, handsomely printed in colors, for the month of August, containing attractively worded advertising matter on the reverse side, has been received from the passenger traffic department of the 'Frisco system, St. Louis. After reading this, most men will want to close the office quick and head for some of the resorts so artistically described along the line of the 'Frisco System.

Silica-Graphite Paint.—Dixon's silica-graphite paint is warranted to prevent corrosion of steel car, and trucks, and to serve a variety of other purposes equally well. The Joseph Dixon Crucible Co., Jersey City, N. J., is sending out a mailing card at this time which briefly points out a few advantages gained by the use of this product.

Durham, N. C.—Brief facts concerning Durham, N. C., are contained in an attractive folder sent out by the Durham Chamber of Commerce. A second folder also contains brief facts about the Chamber of Commerce itself. That Durham is a desirable location either for a residence or business enterprise no one who will read this advertising matter will for a moment doubt. Durham has the reputation of being an exceedingly prosperous business town.

International Sprinklers.—A small folder, containing hundreds of firm names, the buildings of all of which have been supplied with its sprinklers, has been received from the International Sprinkler Co. of New York, Philadelphia, Chicago, Brooklyn and Charlotte, N. C. These cover a wide range of buildings protected by almost every class of insurance, proving conclusively that the International Sprinkler Co. is receiving its share of the American sprinkler business.

Sault Ste. Marie, Mich.—The Chamber of Commerce of Sault Ste. Marie, Mich., is sending out a circular calling attention to the inducements offered manufacturing interests locating in that town. Unlimited electric power is available at reasonable figures, and free sites will be furnished to approved industrial establishments. M. A. Hays, late of the Southern Railway, is secretary of this Chamber of Commerce, and will be glad to furnish any further information.

Improved Ventilator.—The Buffalo Forge Co., Buffalo, reports so great a demand for its handsome ventilator catalogue as to necessitate a new issue. The new issue is a very attractive little catalogue, illustrating a very fine line of Buffalo improved ventilators, fans, blowers, exhaustors, high-speed engines, stationary and portable forges. The ventilators are of exceptionally fine design, ventilating impure atmospheres perfectly. First cost is comparatively small.

Hardwood Flooring.—Treating the subject of hardwood flooring from almost every standpoint, that of the builder, the user and the repair man, comes the little booklet with this title from the T. Wilce Company, 22d and Throop streets, Chicago. Hardwood flooring is not only a beautiful, but an hygienic flooring. Carpets in the homes of many wealthy people have long ago been relegated to the attic. With the rapidly-lessening cost, hardwood floors will come into still more general use.

'Trade Topics.'—Under this title comes the little booklet, said to be "issued from time to time," and to be "entered at the Pittsburg postoffice as strictly first-class mail matter." It is published in the interests of the gas appliance, chandelier and pump business of the Reineke-Wilson Company, 13-15 Wood street, Pittsburg. This company has always dealt on the principle that a satisfied customer is a good advertisement, and that fair, honest dealings, honest goods, courteous and liberal treatment for everybody are bound to win and retain trade.

Albany Grease.—Messrs. Adam Cook's Sons, 233 West street, New York city, who are the only makers of "Albany Grease," have issued a booklet containing information regarding this widely-known lubricant in a brief and attractive way. The pamphlet is in two colors, the cover bearing the familiar "Albany Grease" trade-mark, reproduced in yellow. The manufacturers state that "Albany Grease" is now used in lubricating everything from an automobile to the United States battleship Oregon, having been adopted by the United States government. Copies of the booklet will be sent free upon application.

Air Compressors.—Three sets of instructive folders are those sent out by Herron & Bury Manufacturing Co., Erie, Pa., in describing the steam-actuated, straight-line type air compressors and receivers which it makes. These compressors are entirely self-contained, and combine compactness, simplicity, low first cost and constancy of speed, with ease of operation and general satisfactory results accruing from their use. Robert T. Michie, M. E., De Long Building, Philadelphia; Hal H. Hill, M. E., New England Building, Cleveland; Brown & Zortman Machinery Co., Pittsburg; Morrison & Kindervater, 1107½ East Main street, Richmond, Va.; Ludwig & Co., Empire Building, Atlanta, Ga., are sales agents.

CONSTRUCTION DEPARTMENT.

THE MANUFACTURERS' RECORD seeks to verify every item reported in its Construction Department by a full investigation and complete correspondence with everyone interested. But it is often impossible to do this before the item must be printed, or else lose its value as news. In such cases the statements are always made as "rumored" or "reported," and not as positive items of news. If our readers will note these points they will see the necessity of the discrimination, and they will avoid accepting as a certainty matters that we explicitly state are "reports" or "rumors" only. We are always glad to have our attention called to any errors that may occur.

*Means machinery, proposals or supplies are wanted, particulars of which will be found under head of "Machinery, Proposals and Supplies Wanted."

In correspondence relating to matters reported in this paper, it will be of advantage to all concerned if it is stated that the information was gained from the Manufacturers' Record.

It often occurs that the organization of a new company in a town is not known by the postmaster, and hence letters addressed to the company are returned marked "not known." The Manufacturers' Record reports the first organization of all companies, and our readers, in seeking to get into communication with them, should be very careful in deciding how to address them, and it is often advisable to add the names of one or more incorporators as an aid to the postmaster in delivering mail.

ALABAMA.

Alabama—Iron Mines.—Harold P. Davis of 63 Wall street, New York, will develop brown iron-ore mines in Alabama, and is about to install plant.*

Athens—Oil Mill.—It is rumored that American Cotton Co. (general offices in New York) will build cottonseed-oil mill.

Athens—Molasses Factory.—Northern capitalists will establish molasses factory with capacity of 6,000,000 gallons daily. Names not announced as yet.

Birmingham—Coal Mines.—Pratt Coal Co., reported last week, will at once sink a new shaft 100 feet deep to a 10-foot seam and open ten drift mines. Erskine Ramsey is engineer in charge.*

Birmingham—Coal Mines, etc.—Chartered: Great Elk Company, capital stock \$50,000, by H. S. Jenkins and F. I. Jenkins, to operate coal mines and ore mines.

Birmingham—Coal Mines, Coke Ovens, etc. The new Pratt Coal Co., reported last week as organized and absorbing the previous corporation of the same name, intends to increase the output of the mines from 100 tons to 4000 tons daily; will also construct 300 coke ovens and an improved coal washer to handle 500 tons per day. New mines will be opened at different locations, and all modern conveniences will be utilized to promote the thorough development of this property. T. T. Hillman is president.

Ensley—Barrel Factory.—Ensley Land Co. has completed negotiations securing the establishment of a barrel factory.

New Decatur—Railroad Shops.—Louisville & Nashville Railroad is about to begin construction of additional buildings for proposed extensions to machine shops. It is said the plant will be nearly doubled, and complete cars, with exception of wheels, will be manufactured. L. Watt Allen has been appointed superintendent of construction.

Section—Stone and Timber Saw-mills.—Alabama Coal, Mineral & Lumber Co. expects to build mills for sawing timber and lithographic stone.

Talladega—Grocery.—Talladega Wholesale Grocery Co. has been organized, with capital stock of \$50,000, by Leon G. Jones, J. W. Cowan, G. A. Mattisen, V. L. Adams and

others. Contract has been let to Z. H. Clardy for erection of brick building 79x115 feet.

Talladega—Electric-light Plant.—The Talladega Company, mentioned last week, now has engineers in the field preparing for the development work for its proposed water-power and electric plant. Collier & Brown, Atlanta, Ga., are the engineers in charge. Geo. W. Chambers is president.

Tuscaloosa—Mineral Lands.—Estate of Henry McCormick, 223 Market street, Harrisburg, Pa., has purchased 12,000 acres of mineral land in Marion, Walker and Winston counties, but has as yet no plans for the future for the properties.

Tuscaloosa—Coke and By-product Plant.—It is rumored that Central Iron & Coal Co. is negotiating for the location of a large coke oven and by-product plant.

Tuscaloosa—Lumber Plant.—W. T. Joyce of Chicago states the report mentioned last week as to purchase of timber lands and erection of lumber plant is not correct.

ARKANSAS.

Fort Smith—Coal Company.—Incorporated: Paris Semi-Anthracite Coal Co., with capital of \$250, by H. B. Salls, Joseph Pendleton, Albert Struble and Martin Thekner.

Harrison—Mercantile.—Incorporated: Guarantee Mercantile Co., capital \$10,000, by W. C. Welch, Otto Heflin and R. D. Massey.

Harrison—Lead and Zinc Mines.—Denison Zinc & Lead Co. of Denison, Texas, is increasing capital from \$25,000 to \$50,000 and will open mines at Harrison.

Huntington—Mica Works.—International Mica Manufacturing Co. of Columbus, Ohio, will, it is reported, build a large plant at Huntington.

Knoxville—Cotton Gin.—D. D. Jeter, L. D. Barger, A. B. Williams, C. W. Sanders and J. B. Mahon have incorporated Knoxville Gin Co., with capital of \$2500.

Lake City—Supply Company.—Lake City Supply Co. has been incorporated, with capital of \$20,000; J. M. Smith, president; H. W. Graham, vice-president, and J. D. Shumate, secretary.

Newton—Land Improvements.—Chartered: Newton Land & Improvement Co., with capital of \$10,000, by W. E. Green, J. F. Holden, J. A. Trawick, A. G. Hull, S. J. Beauchamp and others.

Ozark—Mercantile.—W. C. Cornish, H. E. Dowell, Sydney Haines and H. C. McElroy have incorporated Ozark Dry Goods Co., with capital stock of \$10,000.

Piggott—Electric Plant and Gin.—Chartered: Farmers' Gin & Power Co., capitalized at \$6000, for ginning and for operating an electric-light system; incorporators, G. Richter, G. W. Seltz, Throgmorton & Son, B. B. Biffle, J. H. Thomas and Etta Sarver.

Slatington (not a postoffice)—Slate Quarries.—Southwestern Slate & Manufacturing Co. will increase capital stock from \$1,000,000 to \$10,000,000 for the development of extensive slate deposits. Curtis Wright of Carthage, Mo., is president.

Warren—Brick Works.—J. N. Wheeler will establish works with capacity of 35,000 bricks daily. It is said the machinery has been purchased.

FLORIDA.

Carrabelle—Lumber Plant.—Haak Lumber Co. of Haakwood, Mich., has purchased lumber plant at Carrabelle, but not decided as to whether it will operate plant or not.

Jacksonville—Land Developments.—Southern States Land & Timber Co. of New Orleans, La., has completed purchase of about 3,000,000 acres of land at about \$1,500,000. The lands are located in various counties; thousands of acres will be drained for agricultural purposes, and arrangements will be made to develop extensive timber tracts.

Spring Hill—Lumber Plant.—Spring Hill Naval Stores & Lumber Co. will rebuild its plant recently burned and add a sash, door and blind factory.

Tampa—Baking-powder Factory.—P. G. Mook, W. W. Birchfield, S. J. Drawdy, J. E. Lanouette and Fred Lutiens will organize Tampa Chemical Co., with capital of \$25,000, to establish baking-powder factory.

GEORGIA.

Atlanta—Book Company.—Incorporated: Lester Book & Stationery Co., with John Aldridge, president, and O. L. Jernigan, secretary.

Atlanta—Ice Plant.—Eastern capitalists propose building an ice plant of 150 tons daily capacity. They are said to be represented by Col. Jos. Button of Richmond, Va.

Augusta—Woodenware Factory.—The proposed woodenware factory mentioned last week is projected under the auspices of the Chamber of Commerce, Merry Bros. having charge of the construction.*

Augusta—Mattress Factory.—Augusta Mattress Manufacturing Co. will be incorporated by J. W. Dickey, W. J. Hollingsworth, Chas. R. Lombard and T. R. Woodward, with capital stock of \$30,000. Plant to be established at 210 Kollock street.*

Baldwin—Water-power and Electric Plant. It is contemplated to form company for developing water-power and building electric plant. W. D. Lewis can give information.*

Cavespring—Fly-escape Screen Factory.—Frank Wright has erected building and installed machinery for the manufacture of a patented woven-wire fly-escape screen.

Cedartown—Cotton Mill.—Standard Cotton Mills will erect a No. 2 plant to cost about \$100,000 for manufacturing coarse numbers of hosiery yarns. The No. 1 plant has 12,500 spindles, manufacturing fine numbers of hosiery yarns. Order has been placed for the additional mill.

Cedartown—Iron Mines.—North Georgia Mining Co. is preparing to reopen its mines and to work them on a large scale.

Cedartown—Cotton Ginnery.—J. E. Houseal, J. A. Wynn and R. F. Hughes have incorporated Piedmont Ginning Co., with capital of \$5000, for ginning and baling cotton, etc.

Columbus—Water-works.—An ordinance has been introduced in city council calling an election on issuing \$250,000 bonds for building water-works. A resolution was also read appropriating \$5000 or less for boring artesian well. A committee was appointed to secure options on sites for water-works plants. Address "The Mayor."

Dublin—Woodworking Plant.—W. A. Baker & Co. will build a \$5000 plant to manufacture molding, brackets and general building supplies.*

Macon—Electric-light Plant.—W. B. Sparks, president North & South Railroad, states his company will build an electric-lighting plant provided it obtains municipal lighting contract, for which bids will be opened next month.

Mystic—Cotton Ginnery.—A cotton ginnery is being erected. Possibly B. E. Wilcox & Bro. can give information.

Rome—Car Works.—It is proposed to organize a co-operative company, with capital of \$50,000, to establish the car works mentioned last week. Capt. John J. Seay, W. J. West, R. W. Graves and H. D. Hill are interested.

Toccoa—Cotton-oil Mill.—E. P. Simpson, W. C. Edwards, V. A. White, Paul Johns, J. B. Turnbull and others have incorporated Farmers' Cotton Oil & Fertilizer Co. to manufacture cottonseed oil and fertilizers. Capital stock is \$25,000.

Waycross—Cotton Ginnery.—S. D. Pitman, C. E. Murphy, B. G. Bibb, W. W. Sharp, Geo. R. Youmans and others have incorporated Waycross Cotton Ginnery, with capital of \$25,000, to build plant.

Waycross—Car Works.—Satilla Manufacturing Co. (operating planing mill, ice plant, etc.) has taken contract to build four railway caboose cars, and if it finds its experiment successful, will erect additional building and install machinery for adding this branch of business to its various operations.

KENTUCKY.

Caseville—Lead and Zinc Mines.—Lucille Mining Co. has been incorporated, with \$100,000 capital, to develop lead, zinc and spar lands, by J. F. Harth and Leopold Harth of Caseville, and J. R. Finley of Marion, Ky.

Elizabethtown—Asphalt Lands.—Kentucky Rock Asphalt Co. has purchased from W. G. Hutchinson 300 acres of asphalt land which it proposes developing at once.

Frankfort—Coal Company.—Incorporated: Mud River Coal & Supply Co., \$250,000 capital stock, by W. R. Brown and W. M. Trevor of Detroit, Mich., and W. L. Holmes of Fenton, Mich.

Louisville—Increased Capital.—Jos. McWilliams & Co. has increased capital stock from \$150,000 to \$225,000.

Louisville—Clothing Factory.—Logan O. Sampson, Harry Grass and Ed. G. Houser have incorporated Skinner & Co., with nomi-

nal capital of \$500, for manufacturing men's and boys' garments.

Louisville—Clothing Factory.—Incorporated: Mencer & Morrison, to manufacture men's and boys' clothing. The nominal capital is \$500; incorporators, Ed G. Hauser, Harry Glass and Logan D. Sampson. Same parties also incorporated Ed A. Cerf & Co., nominal capital \$500, for same purpose.

Louisville—Lumber Plant.—Louisville Point Lumber Co., mentioned last week as increasing capital from \$7000 to \$16,000, has plant nearly completed, and will saw about 30,000 feet daily.

Princeton—Lead and Zinc Mines.—Incorporated: Lead Hill Lead & Zinc Mining Co., with capital stock of \$200,000, by L. W. Cruce of Marion, Ky.; J. A. Stegar, J. G. Dollar and John C. Gates of Princeton, to mine lead and zinc.

Searcy (P. O. at Waco)—Brick and Tile Works.—Waco Mining & Manufacturing Co., mentioned last month, will build seven additional small kilns and a large brick kiln of 250,000 capacity daily. W. P. Dickey of Lexington, Ky., is secretary.

Soldier—Brick Works.—Louisville & Portsmouth Fire-Brick Co., reported last week (under Louisville) with \$100,000 capital, has elected J. H. Sale of Louisville, president, and L. P. Haldeman, secretary, and is preparing to build an extensive plant. L. A. Bellinger of Ashland, Ky., is preparing plans for the building. Contracts for machinery will be placed soon.*

LOUISIANA.

Jennings—Oil Wells.—Louisiana Standard Oil & Pipe Line Co. has been incorporated, with capital stock of \$500,000, to drill for oil, by Geo. Conover, R. W. Mills, C. M. Tiney, C. W. Savage, A. H. Holman and others.

Jennings—Oil Pipe Lines and Tanks.—Northern Oil Co. has placed contracts for construction of pipe line, 38,000-barrel steel tank and pumping plant.

Kinder—Mercantile.—J. W. Kingrey & Co. has incorporated, with capital of \$4000; Jos. W. Kingrey, president, and Dempsey C. Cole, secretary.

Lake Charles—Transportation Company.—Heywood Bros. Transportation Co. has been chartered, with authorized capital of \$100,000, to conduct transportation business by boat on Mermentau and Calcasieu rivers. Alba Heywood is president; Dewey Heywood, vice-president; W. H. Stengle, secretary, and O. W. Heywood, treasurer.

Lecompte—Water-works.—City has voted \$10,000 for the construction of water-works, and will obtain supply by artesian wells. Address "The Mayor."

New Orleans—Ice Plant.—It is stated that an ice plant to cost \$200,000, capacity from 250 to 300 tons daily, will be built by local capitalists interested in abattoirs. A. D. Latchford can give information.

New Orleans—Realty.—The Realty Company, Ltd., has been incorporated, with capitalization of \$500,000; Jos. M. Elliott, president; August Marchal, vice-president, and A. C. de Monsabert, secretary.

New Orleans—Timber Lands.—Chicago capitalists are negotiating the purchase of 20,000 acres of timber land, which they propose developing. E. E. Barthell of Nashville, Tenn., is their representative.

New Orleans—Rice Company.—Chas. E. Cornier Rice Co., Ltd., has been incorporated, with capital stock of \$50,000, to deal in rice and rice products. Chas. E. Cornier is president; Gorman S. Orme, vice-president, and Jas. L. Pitot, secretary.

New Orleans—Round-bale Compress Works. Boland & Gschwind Co., operating extensive machine shops, propose organizing a company capitalized at probably \$1,500,000 to establish the plant mentioned last month for manufacturing a new round-bale cotton compress. It is also proposed to organize a number of branch companies throughout the cotton-growing sections to locate and operate these presses.

Shreveport—Telephone System.—Louisiana Construction Co. has been organized, with capital stock of \$500,000, of which \$120,000 has been subscribed, for constructing telephone systems at various points. W. B. Richie of Lima, Ohio, is president; M. D. Shaw of Wapakonita, Ohio, vice-president; C. D. Crites of Lima, Ohio, treasurer, and C. B. Handy of Wauseon, Ohio, secretary.

Sunset—Cotton-oil Mill.—Sunset Delinting & Cotton Oil Co., Ltd., has been organized,

with capital of \$100,000, to build cottonseed-oil mill recently proposed.

MARYLAND.

Baltimore—Amalgamator Works.—Chartered: Baltimore Amalgamator Co., for the manufacture of machinery, by Peter J. Nelson, John W. Bowen, Thomas Turner Tongue, Frank J. Kohler and Charles H. Knapp. The capital stock is \$10,000.

Baltimore—Plumbers' Supplies Works.—C. M. Kemp Manufacturing Co. has permit to erect three-story factory building to cost \$2,000 as an addition to its plumbers' supplies works.

Baltimore—Washing-machine Factory.—Incorporated: Spray Washing Machine & Manufacturing Co., for dealing in washing machines, household articles and novelties, by Henry S. Kohl, Walter H. Waddell, William W. Radcliffe, Glendon P. Hopkins and Henry S. Abenschein. The capital stock is \$50,000.

Baltimore—Belting Factory.—John T. Whitehurst, Thos. J. Shryock, Frank Ehlen, Walter I. Whitehurst and Geo. W. Gall, Jr., have incorporated Whitehurst Belting Co., with capital stock of \$125,000. This company manufactures belting direct from raw cotton, and claims its product is absolutely non-stretching; offices at Holliday and Saratoga streets.

Baltimore—Cannery.—W. H. Kidwell, Arthur E. Kidwell and W. Harrison Newman have incorporated Kidwell Bros. Co., with capital stock of \$50,000, for canning and packing oysters, fruits, vegetables, etc.

Baltimore—Manufacturing Chemists.—McCormick & Co., 44 South Charles street, have purchased at \$10,000 a building four stories high, 100x200 feet, and will expend about \$15,000 to improve the structure, and in it will concentrate all the branches of its business now scattered under five roofs. The firm will have nearly two acres of floor space, and will equip for increasing its facilities in the manufacture of drug sundries as well as the importation and milling of spices, crude drugs, leaves, seeds, etc. The spice and mustard mills will be specially equipped with modern machinery.*

Cumberland—Drug Company.—Chartered: Ringgold-Reinhart Company, with \$100,000 capital, by Rowland C. Ringgold, Edward L. Reinhart of Shepherdstown, W. Va.; Robert A. Ravenscroft, Accident, Md.; Charles E. Conneys and Henry Shriver, Cumberland, and others.

Frederick—Medicine Factory.—Victor Remedies Co. has been incorporated, with capital stock of \$100,000, for manufacturing patent medicines. Jacob F. Good of Midvale, Pa., is president; Jas. H. Harris of Frederick, vice-president; Dr. P. D. Fahney of Frederick, treasurer. Address the latter.

Frederick—Telephone System.—Edgar L. Miller, Alonzo P. Marsch, John P. Lipps, Thos. A. Lipps and Samuel A. Lewis have incorporated Maryland Telephone Co., with capital stock of \$100,000. It is stated that charter has been sold to International Telephone Co., which has acquired and will acquire various telephone systems and establish systems at different points. A. B. Reinhart, president Citizens' National Bank, Waynesboro, Pa.; C. W. Mackey, president Franklin Steel Co., Franklin, Pa., and other prominent capitalists compose the International Company. Address Edgar L. Miller at Frederick.

Frederick—Telephone System.—Incorporated: Maryland Telephone & Telegraph Co., by A. P. Marsh, Samuel A. Lewis, Thomas Lipps, John Lipps and E. L. Miller. The capital stock is \$100,000.

Hyattsville—Electric-power Plant.—Washington, Baltimore & Annapolis Electric Railway Co. of Washington, D. C., has purchased site for the construction of electric-power plant to supply suburban trolley lines. It is stated that the building alone will cost \$350,000, and that 8000 horse-power will be generated, proposing to furnish power to factories. Jas. Christy, Jr., Bond Building, Washington, D. C., is general manager.

Love Point—Excursion Resort.—Chartered: Love Point Company, by Frank Ehlen, Thos. W. Jenkins, Albert E. Thompson, James H. Traynor and Robert W. Smith, all of Baltimore, with capital stock of \$100,000, to develop an excursion resort.

Parkton—Lumber Co.—Gunpowder Lumber Co., lately reported incorporated (under Baltimore) with capital of \$5000, has elected president, Dr. R. R. Norris; vice-president, Samuel W. Webb, and manager, Arthur Arnold.

MISSISSIPPI.

Biloxi—Electric-light Plant.—E. C. Joullian has obtained franchise for construction of electric-light and power plant, and will organize a corporation to carry out the plan.

Gulfport—Realty and Improvement.—Gulfport Real Estate & Improvement Co. has been incorporated, with capital stock of \$100,000, by J. T. Jones, H. A. Jackson and E. A. Durhan.

Jackson—Electric-power Plant.—F. J. Butler of Greenville, Miss., has contract at \$36,020 for installation of electric-power plant for the \$1,000,000 Statehouse now being built.

Jackson—Plaster Works.—C. A. Bonds, Wm. Anderson, J. C. Hood, A. A. Wood and W. J. McGee have organized Southern Wood Fiber Plaster Co., capitalized at \$10,000, to manufacture wood-fiber plaster, etc.

Leland—Hardware.—Leland Hardware Co. has organized, with capital of \$10,000; C. C. Dean, president; J. W. Thompson, vice-president, and Jas. A. Gary, secretary.

Lexington—Electric-light and Ice Plant.—Lexington Ice, Light & Water Co. contemplates rebuilding its burned electric-light plant and 10-ton ice plant, and will probably decide definitely.*

Meridian—Water-works.—City has voted affirmatively on the proposed issuance of \$150,000 of bonds for construction of water-works. Address "The Mayor."

Ripley—Oil Mill.—Ripley Oil Mills has increased capital from \$25,000 to \$40,000.

Tunica—Oil Mill.—Planters' Oil Mill, mentioned last week as making improvements to its plant, is expending about \$10,000 for the same. J. W. Reinhold of Memphis, Tenn., is doing the construction work.

West Point—Mattress Factory.—A \$10,000 company will organize for the establishment of a mattress factory. Names of interested parties not announced yet.

MISSOURI.

Kansas City—Rolling Mill.—Safety Angle Bar & Railroad Supply Co. has been incorporated, with capitalization of \$2,500,000, of which it is said \$150,000 has been subscribed. The incorporators are D. N. Estey of Owasso, Mich.; M. V. Watson, W. H. Winants, E. H. Phelps, T. H. Goodwin and J. T. Edling of Kansas City. They propose building mill to manufacture angle bars and various railroad appliances. Orders for machinery have been placed, and it is said buildings to cost \$50,000 will be erected. T. H. Goodwin, secretary, can be addressed.

St. Louis—Oil-burner Works.—Frank M. Gordon, Franklin C. Burdette, Fred L. McGahan, Harry C. Barter, Chas. Sutter, Geo. S. Robinson and L. C. Spooner have incorporated National Light, Heat & Power Co., with capital stock of \$1,500,000, to manufacture a newly-patented equipment for burning oil as fuel. Company's address is care L. C. Spooner, Holland Building.

St. Louis—Contracting.—Incorporated: Jos. P. Kelly Bricklaying & Contracting Co., capital \$5000, by Joseph P. Kelly, Louis Stuerman and John F. Muldoon.

St. Louis—Manufacturing.—Incorporated: Scotland Manufacturing Co., maker of stock and poultry food, capital stock \$4000, by John J. Hopson, David Rubin and Thomas Hollinshead.

St. Louis—Electric Plant.—Neighborhood Light, Power & Heating Co. has been organized, with \$50,000 capital, to put in a plant for furnishing electricity as light, heat and power. Contract for modern plant has been awarded. E. T. Schafley, president of Missouri Trust Co., is manager.

St. Louis—Insulating material Factory.—Incorporated: Dielectric Manufacturing Co., to manufacture, buy and sell electric insulating materials; capital \$3000; incorporators, Fred Sewedtmann, J. J. Kessler, Jr., George E. Wells and W. J. Fogarty.

St. Louis—Asbestos Manufacturing.—Asbestos Manufacturing Co. has been incorporated, with a capital of \$10,000, by Joseph H. Beckwith, Harry P. Hubbell and Thomas J. Conner.

St. Louis—Furniture Factory.—Missouri Furniture Co., 1427 Sarsfield Place, will build an additional factory. John E. Mueller has contract to erect the building, three stories high, 60x127 feet, to cost \$30,000.

NORTH CAROLINA.

Ashpole—Lumber Company.—A. L. Jones, J. D. Bush and R. B. Raynor have incorporated Southern Lumber Co., with capital stock of \$30,000.

Beaufort—Clam Company.—Chartered: Beaufort Little Neck Clam Co., with authorized capital stock of \$7500, which may be increased to \$30,000, by J. H. Potter, H. L. Potter, W. V. B. Potter and Guy D. Potter.

Boiling Springs—Telephone System.—T. J. Hamrick and others have incorporated Boiling Springs Telephone Co., with capital of \$1000.

Dunn—Cotton-oil Mill.—Dunn Oil Mills Co.,

reported last week, has paid-in capital of \$40,000, and has completed buildings for its mill. The machinery is now being installed.

Elizabeth City—Electric Plant and Water-works.—C. M. Ferebee has asked for franchise for lights, water, electricity, etc.

Elkin—Woodworking Plant.—Chartered: Bally Manufacturing Co., capital \$25,000, for making insulator pins, furniture and novelties, by E. T. Bailey of New York, D. W. Bailey, George Bailey and W. M. Bell of Elkin.

Fayetteville—Electric-light Plant.—City has definitely decided upon the construction of its proposed electric-light plant. Plans and specifications have been obtained, and copies can be had by application to "The Mayor" or to chairman of light committee, N. B. Alexander.*

Goldshoro—Grocery.—H. A. Powell, J. B. Fonville and W. H. Fonville have incorporated H. A. Powell Grocery Co., with \$2500 capital.

Greensboro—Candy Factory.—Chas. Boyst has established a candy factory.

Henderson—Cotton Mill.—Harriet Cotton Mills will add 6000 spindles; this will fill present building and utilize surplus power; company now has 10,500 ring spindles.

Henderson—Mercantile.—Burroughs-Powell Company has been incorporated, with capital of \$6000, by Silas and H. P. Powell, J. B. and P. G. Burroughs.

Mt. Airy—Electric-light and Water Works.—City has decided to grant franchise for construction of water-works and electric-light plant. City owns water-power to be utilized in connection therewith. Correspondence is solicited. J. C. Hollingsworth, city secretary, can be addressed.*

New Berne—Fertilizer Factory.—E. H. & J. A. Meadows Company, manufacturer of fertilizers, has let contract for erection of new plant to H. B. Simpson, who is also engineer in charge.*

Smithfield—Tobacco Prizery.—Company has organized, with A. K. Smith, president, and N. M. Lawrence, Jr., secretary, to build tobacco prizery; will erect brick building 50x180 feet, two stories high.

Southport—Telephone Line.—E. A. Perry and E. A. Pifer of Chadbourne, N. C., propose constructing telephone line from Southport to Wilmington by way of three other towns.

Spray—Dairy.—Chartered: Thacker Dairy & Stock Co., with \$25,000 capital, by C. H. Thacker, W. R. Walker and F. M. Ellett.

SOUTH CAROLINA.

Bethune—Mercantile.—N. A. Bethune, G. E. King, A. McDonald and B. McDonald have incorporated Bethune Mercantile Co., with capital of \$5000.

Chesterfield—Lumber Plant.—Chesterfield Lumber Co. will rebuild its plant burned last week.

Marion—Oil Mill.—Marion Cotton-Oil Mills has increased capital from \$20,000 to \$30,000.

Parksville—Oil Mill, etc.—Incorporated: Parksville Ginnery & Oil Mill Co., capital stock \$4000, by W. B. Parks, J. M. Bussey and L. F. Dorn, to operate ginnery, oil mill, ice plant and fertilizer factory.

Spartanburg—Cotton Mill.—Drayton Mills, recently reported organized, etc., and now erecting building, has decided to install 12,410 spindles and about 360 looms; Arch B. Calvert, president.

Yorkville—Cotton Ginnery.—Black Bros. will establish a large cotton ginnery.

TENNESSEE.

Chattanooga—Iron Furnaces, etc.—Valley Iron Co., reported during the week, has organized with James W. Bowron, president; G. B. McCormack, vice-president, and Erskine Ramsey, secretary-treasurer, all of Birmingham, Ala. It is said that Wm. Nixon (formerly general manager of Cumberland Coal & Coke Co.) will be general manager. As stated last week, company is capitalized at \$1,000,000, and proposes developing iron mines, building furnaces, etc. Address the president.

Chattanooga—Wood-pulley Works.—Gurney Manufacturing Co. of Roan Mountain, Tenn., has purchased Von Hardtmuth Cedar Works of Chattanooga, and will remove its plant to that city, manufacturing wood pulleys, wooden bowls, etc., and expects to enter largely into the manufacture of transmission machinery, supplies, etc. Capital has been increased to \$45,000.*

Chattanooga—Iron Furnaces, Mining, etc.—In reporting last week the data as given by dispatches regarding the Valley Iron Co., it was stated that James Bowron of Birmingham, Ala., was to be president and manager. This is entirely untrue, and several of the

parties named have no connection whatever with the new company. As soon as the Valley Iron Co. has definitely planned its iron mining and manufacturing developments near Chattanooga authoritative announcements will be made.

Clarksville—Telephone Franchise.—R. B. Crane and associates of Toledo, Ohio, have received municipal telephone franchise.

Jonesboro—Water-power Development.—It is stated that W. P. Brownlow has secured control of Western Lighting & Power Co., which proposes developing water-power on Watauga river and building an electric plant to transmit the power.

Memphis—Telegraph Lines.—Incorporated: Tennessee District Telegraph, by E. Howard, J. Compton, W. T. Gentry, James Merrihew and George H. Fearons. Capital stock is fixed at \$100,000.

Memphis—Steam Laundry.—Chartered: Metcalf Star Laundry Co., by Morris Harty, Charles Bartholomew, Frank Bell, Mary M. Barry, J. H. Smith and others. The capital stock is \$10,000.

Memphis—Molasses Refinery.—C. A. Coe will establish molasses refinery at 589 Shelby street. He has permit to erect \$3000 frame building for the plant.

Memphis—Electric and Gas Plant.—Incorporated: Citizens' Gas & Electric Light Co., with a capital stock of \$100,000, for the manufacture of gas and electric current for light, heat and power. The incorporators are J. H. Stolper, Percy H. Patton, Louis E. Defant, Henry Craft and August H. Bush.

Memphis—Cotton Ginnery.—Incorporated: Memphis Ginning & Cotton Huller Co., by J. H. Pope, D. M. Armstrong, Edwin Pope, R. P. Pope and J. B. McBride, Jr. Capital stock is fixed at \$5000. Purpose, to build cotton ginnery.

Memphis—Electric and Gas Plant.—Dr. J. H. Stolper and others are applying for incorporation of \$250,000 stock company to build gas and electric-lighting plants.

Memphis—Cotton Ginnery.—J. H. Pope, Dwight M. Armstrong, Edward Pope and J. B. McBride, Jr., have incorporated Memphis Ginning & Cotton Huller Co., with capital stock of \$5000.

Monroe County—Timber-land Developments.—J. M. Carpenter of Galeson, Pa., and associates have acquired 42,000 acres of land, but have not as yet fully decided when they will develop the property, although they are making preliminary surveys for railroad. (An incomplete mention was made recently as to this proposed development.)

Nashville—Iron Mining and Manufacturing, etc.—Bon Air Coal & Iron Co. (reported at length July 31 and capitalized at \$500,000) has begun development work for its proposed extensive enlargements of the consolidated properties. At Ravenscroft a new shaft has been sunk and coal seam found at 169 feet; a mine of 1000 to 1500 tons daily capacity will be developed. At Eastland five or more collieries will be constructed. About \$250,000 will be expended for various enlargements, as previously stated, and all machinery has been bought. J. M. Overton is manager.

Nashville—Compressed-gas Plant.—Pintsch Compressed Gas Co. (general offices in New York) will establish large compressed-gas plant to cost about \$10,000, and is now securing land as site.

Tellico Plains—Iron and Slate Mines, etc.—J. P. Hornaday of Cincinnati, Ohio, mentioned last week as one of the purchasers of 40,000 acres of mineral lands, etc., states that the new company to own and provide for the development of the property will be known as Tellico Mineral & Railway Co., and that articles of incorporation are being prepared by Luckey, Saunders & Fowler, attorneys, of Knoxville, Tenn. Mr. Hornaday is at Pittsburg closing contracts for ore, slate and copper mining. Address company, care of Chas. A. Weller, Knoxville, Tenn.

Winchester—Ice Plant and Laundry.—Vaughan & Fuller contemplate establishing small ice plant and steam laundry.*

TEXAS.

Austin—Water-works.—City has provided for the purchase at \$175,000 of the plant of Austin Water Co., thus ending certain differences with the company. It is proposed to improve and extend the system. Address "The Mayor."

Beaumont—Oil Wells.—Chartered: R. L. Cox & Co., capital stock \$100,000, to drill for oil, by R. Oliver, W. T. Campbell, E. J. Marshall, R. L. Cox, J. W. Boynton.

Beaumont—Mineral Company.—Incorporated: Beaumont Mineral Co., capital stock \$25,000, to prospect for oil, minerals, etc.; incorporators, H. D. Fletcher, Charles Martin, Beaumont; F. R. J. Stratford, Indianapolis, Ind.

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Beaumont—Sulphuric-acid Plant.—Mark T. Cox, banker, of New York city, was reported in June as organizing company to build large zinc smelter and sulphuric-acid plant. E. H. Mower, his representative, is now completing arrangements to begin construction of the proposed plant, and it is stated that R. R. Rust of New York will be local manager for the next few months. Jos. Keller of Joplin, Mo., will be local superintendent of the construction work. It has been reported that \$1,000,000 will be invested.

Beaumont—Ice Plant.—Incorporated: Beaumont Ice & Brewing Co., capital stock \$250,000, by D. Call, J. L. Knoepfer and Sam Park. This enterprise has been before reported as proposed.

Cleburne—Telephone System.—Incorporated: Cleburne & Bono Telephone Co., capital stock \$1000, to construct and maintain a telephone line from Cleburne through Bono to ranch headquarters of J. M. Mims, M. L. Kennard, T. J. Honea and J. B. Landers (the incorporators).

Cross Roads—Cotton Gin.—Chartered: Delta Cross Roads Gin Co., capital stock \$10,000, by B. F. Clark, T. C. Johnson and H. H. Cooper.

Dallas—Printing Plant.—Dorsey Printing Co. will establish the large printing plant referred to last week. Contract for erection of the required building, six stories, 50x203 feet, to cost \$56,000, has been awarded to Sonfield & Emmens. Equipment will be installed for general printing and manufacturing stationery, lithograph work, etc.*

Dallas—Electric Plant.—Geo. W. Mitchell has purchased the Dallas Electric Co. and plant at public sale for \$300,000 in the interest of the bondholders. It is presumed that the purchase is in behalf of the Dallas Electric Light & Power Co., which recently organized. Address Mr. Mitchell.

Dallas—Tailoring.—Chartered: Hurst Tailoring Co., capital stock \$10,000, by E. A. Hurst, E. S. Hurst and E. M. Hurst.

Eagle Lake—Rice Cultivation.—Incorporated: Eagle Lake Rice Co., capital stock \$300,000, by Robert G. West of Austin, Chas. M. Miller of Texas and James S. Odell of Chicago.

El Paso—Brewery.—J. M. Clements, banker, of Fort Worth, Texas, is interested in building brewery at El Paso.

Florence—Mercantile.—Incorporated: Hobbs-Lindsey Company, capital stock \$800, by W. R. Hobbs, W. J. Pigott and B. F. Lindsey.

Galveston—Seawall Bids.—County commissioners opened bids August 11 for construction of the proposed seawall, for which proposals were recently asked. Isaac Heffron was the lowest bidder at \$1,067,300. This amount is reported as about \$200,000 less than the lowest estimate made by Geo. W. Boschke, engineer in charge. Contract not signed yet.

Georgetown—Mercantile.—Chartered: Leavel, Hamilton, Nebon & Co., capital stock \$25,000, by Chas. H. Leavel, C. C. Hamilton and John H. Leavel.

Henrietta—Mercantile.—Chartered: J. M. Hall Mercantile Co., with capital of \$3000, by J. M. Hall, R. H. Keith, C. H. Kellogg and John Patterson.

Houston—Barrel Factory.—Little Rock Coopers Co. of Little Rock, Ark., has purchased site and will expend about \$30,000 for establishment of coopership with daily capacity of 800 barrels.

Houston—Delinting Plant.—S. C. McCandless, W. H. Mallet and N. V. McKibben of Jackson, Ga., propose establishing a delinting plant at Houston.

Houston—Lumber Manufacturing.—Incorporated: Southern Pine & Cypress Co., capital stock \$50,000, to manufacture lumber, by J. B. Thomas, J. A. McFarland, H. F. McFarland.

Houston—Cotton Company.—Incorporated: Houston Cotton Co., capital stock \$5000, by C. H. Lucy, W. R. Robertson of Houston and J. C. Monier, Chicago.

Itasca—Telephone System.—Citizens' Telephone Co. has organized, with capital of \$10,000; P. R. Stephens, president; R. E. Kerr, vice-president; John R. Griffin, secretary, and W. N. Buchanan, general manager. It acquires exchange heretofore operated by J. S. Davis, and will improve and enlarge the system.

Jefferson—Iron Furnace, etc.—L. S. Colyar of Chattanooga, Tenn., who was recently reported as having purchased the Jefferson Iron Co. and its properties, has reorganized the company. Mr. Colyar has been elected president and treasurer; W. B. Ward of Jefferson, vice-president, and W. T. Atkins of Jefferson, secretary. The furnace is ready to be blown in, and experienced men have been ordered to obtain a sufficient quantity of raw

material to put it in blast. Executive offices are with the president at Chattanooga.

Longview—Woodenware Factory.—Incorporated: Longview Crate & Woodenware Co., capital stock \$10,000, to manufacture all kinds of woodenware, by J. R. Castleberry, G. L. Reynolds, C. W. Lawrence. Company will build plant, and C. W. Lawrence is engineer in charge.*

Marlin—Ice Plant.—Incorporated: Marlin Ice & Cold Storage Co., capital stock \$20,000, by J. L. Lenoir, S. W. Donohoo and J. H. Laski.

Newday—Gin and Crate Factory.—A cotton gin and a crate factory will be established. J. W. McMillin of Rusk, Texas, has construction contract, and can probably give information.

Orange—Wood-pulp Plant.—It is rumored that Samuel Brown, chemist, is organizing company to establish wood-pulp plant.

Paris—Mercantile.—Chartered: North Texas Dry Goods Co., capital stock \$200,000, by J. R. Shelton, T. J. Record and L. J. Bankhead.

San Antonio—Oil Wells.—Chartered: Southwestern Oil Lands Development Co., capital stock \$50,000, to drill for oil, by John Holland, W. P. Wilckline, J. W. Schubardt.

Seguin—Irrigation Plant.—Report mentioned last week as to Baker Bros. is not correct, but Dudley D. Baker is preparing to install irrigation plant of 1000 gallons per minute capacity.

Waco—Water-works.—City has enacted ordinance authorizing \$200,000 in bonds for construction of water-works, an action that has been pending for some time. Address "The Mayor."

Weatherford—Water-works.—The city will make immediate arrangements to construct its water-works by day labor, as reported last week. Specifications are in charge of chairman of water-works committee, J. T. Cotten, who will furnish same on application, and to whom all communications should be addressed.*

Whitewright—Telephone System.—Chartered: Whitewright Telephone Co., capital stock \$10,000, to construct and operate telephone lines, by W. A. Fain, R. May and Lille Selph.

Winnboro—Orchard Company.—Incorporated: Elberta Orchard Co., capital stock \$50,000, for growing fruits and vegetables; directors, Fred W. Malley of Hulen, W. T. Whitman, J. M. Lanford of Winnboro, M. Q. York of St. Louis, Mo.; J. M. Gore of Quincy, Ill.; Chas. Voigt of St. Louis, Mo.; Carroll York of Elberta, Texas.

Yoakum—Steel Plant.—A dispatch states that the Yoakum Improvement Co. has let contract for construction of building 50x104 feet, with an annex 50x80 feet, to cost about \$20,000, for a large steel plant.

VIRGINIA.

Augusta County.—The Steel Ores Co. has incorporated under New York laws, capitalized at \$500,000 in stock and \$250,000 in bonds, and its prospectus states that it will engage in mining, shipping and dealing in iron and manganese ores in Augusta county. J. H. Everett is to be president, and Henry T. Fay, secretary and treasurer. Their post-office address cannot as yet be definitely stated, but presumably it is New York city.

Buena Vista—Iron Furnaces.—Allegheny Ore & Iron Co. has purchased Buena Vista iron furnace, and proposes operating same. Chas. H. Zehnder, 25 Broad street, New York, is president.

Chase City—Timberland Developments.—Lord & Watson (New Jersey lumber manufacturers) have purchased large tracts of timber lands near Chase City, and intend to institute developments.

Norfolk—Steel-shutter Factory.—Jas. G. Wilson, president Steel Blind & Shutter Co., New York, is investigating with a view to locating a factory at Norfolk.

Norfolk—Shipyards.—W. H. H. Trice & Co. state that the reports regarding the shipyard with which their name has been connected, mentioned last week, are entirely unfounded.

Norfolk—Electric-light and Power Plant.—People's Light & Power Co. has been incorporated, with capital stock of \$100,000, to build electric plant to furnish light and power. It will ask for a 30-year franchise from the city. John G. Tilton is president; M. W. Mason, vice-president; A. Brooke Taylor, secretary, and W. A. Godwin, treasurer.

Norfolk—Car Works.—Bowen & Street, 600 Citizens' Bank Building, dealers in general machinery and equipment, intend to erect shops for building and rebuilding cars and storing locomotives and cars; will locate plant in Suffolk or Norfolk.

Portsmouth—Cotton-oil Mill.—J. & F. Oil-

ver will build the cottonseed-oil mill mentioned last week. Building has begun, by day labor, and Geo. Swisher is architect in charge. Address all communications to Fred Oliver.*

Stony Man—Copper Mines.—Virginia Consolidated Copper Mining Co. has struck an eight-foot vein of copper at a depth of 120 feet, and has purchased equipment to sink shaft to the 500-foot level. This company is composed of Pittsburgh and McKeesport (Pa.) capitalists, and organized several months ago with capital of \$50,000. It has leased over 2000 acres of land, and will thoroughly develop the property. T. A. Dunshee (National Hotel, McKeesport, Pa.) is company's superintendent at the mines.

Winchester—Telephone Systems.—The absorption of Winchester Telephone Co. by United Telephone & Telegraph Co. of Philadelphia has been officially announced. The company is said to control 30,000 'phones. R. T. Barton of Winchester was elected president; W. D. Bernard of Philadelphia, vice-president; S. R. Caldwell of Philadelphia, treasurer; S. L. Hoover, local manager; W. J. Latta, Philadelphia, general manager.

WEST VIRGINIA.

Bridgeport—Gas and Oil Wells.—Chartered: Bridgeport Natural Gas & Oil Co., to prospect for natural oil and gas; capital stock \$25,000; incorporators, A. J. Lodge, A. J. Williams, A. D. Fitzhugh, O. D. Barnes and John Dunkin.

Charleston—Clothing Factory.—Incorporated: Charleston Manufacturing Co., to manufacture overalls, pantaloons, etc.; capital stock \$20,000; incorporators, F. W. Abney, F. R. Pond, Will O. Abney, Harold Lightner and J. M. Payne.

Charleston—Land Company.—Incorporated: Prince Land Co., capital stock \$150,000, by W. A. MacCorkle, W. E. Chilton, J. E. Chilton, George O. Chilton and J. A. Holley.

Clarksburg—Wrench Works.—Boston capitalists contemplate establishing wrench works, and Board of Trade is seeking to locate the plant.

Clarksburg—Tinplate Works.—A correspondent states that Jackson Iron & Tinplate Co. has announced that it will soon prepare plans for eight additional mills costing \$500,000, a complete black plate and tinning department to be constructed.

Elkins—Land Improvement.—B. W. Taylor, Jos. S. Miller, J. S. Posten, C. H. Livingston and others have incorporated the Manufacturing & Improvement Co. and purchased twenty-six acres of land, which they will improve as site for building and factory lots.

Elm Grove—Heating-equipment Works.—Pittsburg Warming & Heating Co. will locate plant for manufacturing heating equipments. C. D. McCarty, Masonic Temple, Wheeling, is preparing plans for main building 100x200 feet and warehouse 50x100 feet.

Moundsville—Bed Factory.—National Bed Co., recently reported incorporated with capital of \$100,000, has begun construction of its plant for making brass and iron beds. W. C. Stewart has charge of all building operations, etc.*

New Martinsville—Coal Mining, etc.—Incorporated: Morgan Coal, Coke & Manufacturing Co., capital stock \$50,000, by J. D. Morgan, Smithfield, W. Va.; William Carlin, Archies, W. Va.; J. N. Morgan, Pine Grove, W. Va.; Justus Eakins and D. C. Helmick of New Martinsville, W. Va.

Parkersburg—Mercantile.—Chartered: Graham-Bumgarner Company of Parkersburg, capital stock \$100,000, by T. E. Graham, C. D. Bumgarner and F. H. Brown of Parkersburg, J. E. Brown of Sandyville and D. N. Graham of Fountain Spring.

Sistersville—Glass Works.—Capitalists from Washington, Pa., have about closed negotiations to establish large glass works. Capt. Eph Wells has agreed to furnish site, and can probably state addresses of projectors.

Valley Bend—Lumber Mill.—Chartered: Excelsior Lumber Co., manufacturer of lumber, capital stock \$10,000, by Reed Bigley, Racine, Ohio; C. J. Koehler and H. E. Koehler, Pomeroy, Ohio; J. P. Jones and Jacob Chapman of Minerville, W. Va.

Weaver—Coal Mines and Coke Ovens.—Weaver Coal Co. has changed its title to Weaver Coal & Coke Co. and increased capital stock from \$1,500,000 to \$3,000,000 for the purpose of extending its mining operations and constructing ovens for the manufacture of coke. The company's properties include 5000 acres of coal land in Randolph county, West Virginia; two mining towns, a 25-mile steam railway and 11,000 acres of coal land in Illinois and Ohio. It is stated that John W. Gates of the United States Steel Corporation, New York city; Wm. Edenborn of the same company, Isaac L. Eliwood and Samuel

W. Allerton, all of New York city, have purchased large interests in the Weaver Company, and will supply capital for the further developments in contemplation. Henry E. Weaver is president.

Welch—Coal Mines, etc.—Incorporated: Bell Coal & Coke Co. of Welch, to mine and ship coal, capital stock \$25,000, by John Booth of Welch, Charley Wagner, Isador Katzen, O. Bahm and L. Kaufman, all of North Fork, W. Va.

Wheeling—Electric Machinery.—Incorporated: Mutual Electric & Machine Co., authorized capital stock \$25,000, by H. S. Sands, H. M. Kirk, H. E. Hoffman and James W. Ewing of Wheeling, and W. D. Graves of Cleveland, Ohio.

OKLAHOMA TERRITORY.

Cleo—Mining.—A. J. Holderman, J. W. Francisco, J. W. Bishop and O. F. Houts have incorporated Cleo Prospecting & Mining Co., with capital stock of \$100,000.

Dover—Milling.—Chartered: Dover Milling Co., with \$30,000 capital, by David and Thos. Feglesome, John Peter, W. K. and W. J. Miller.

Guthrie—Mining.—Chartered: Empire Mining Co., with \$500,000 capital, by C. H. F. A. and J. B. Campbell.

Guthrie—Publishing.—Chartered: State Capital Co., with capital stock of \$150,000, by Frank H. Greer, Frank Deer and Fred H. Byers, for printing and publishing.

Lawton—Water-works and Sewerage.—City has decided upon construction of water-works and sewerage system, plans and specifications for which have been obtained. Bids will be opened August 15; L. P. Ross and others, council committee.*

Marshall—Townsite Company.—W. L. Helton, J. H. Stafford, R. W. Murphy, S. E. Rice and associates have incorporated Marshall Town Co., with capital stock of \$12,000.

Mt. Sheridan—Mining, etc.—Chartered: Fidelity Mining & Development Co., \$5000 capital, by S. P. Iles of Kansas City, Mo.; H. H. Ultermark of Kalamazoo, Mich.; James E. Pennick of Weatherford.

Norman—Crate Factory.—Henry T. Miller, John J. Burke, E. K. Himes and others have incorporated Ventilated Fruit Crate Manufacturing Co., with capital stock of \$100,000.

Oklahoma City—Hydraulic Stone.—Chartered: Atlas Hydraulic Stone Co., by John T. Jones, George W. Barrett, Jordan B. Thomas and Alexander D. Jones. Capital is \$10,000.

Shroud—Telephone System.—Chartered: S. S. Telephone Co., \$10,000 capital, by Ezra Brown, John A. Melnecke and Horace M. Jarrett of Shroud, James E. Noble of Shawnee, O. T.; E. D. Sims of Roff, I. T., and D. McKinstry of Perry, O. T.

Tonkawa—Milling.—Chartered: Tonkawa Milling Co., with \$500 capital.

BUILDING NOTES.

*Means machinery, proposals or supplies are wanted, particulars of which will be found under head of "Machinery, Proposals and Supplies Wanted."

Alexandria, La.—City Hall.—City will order an election on issuing \$25,000 bonds for construction of city hall. Address "The Mayor."

Alexandria, La.—Courthouse.—E. B. & W. S. Hull of Jackson, Miss., have received contract to build proposed courthouse, to cost about \$71,000.

Annapolis, Md.—Church.—Elmer E. Parkinson has contract to erect structure for German Lutheran Church.

Annapolis, Md.—Statehouse Annex.—Henry Smith & Sons of Baltimore have contract at \$43,672 for erection of annex to the Statehouse. Baldwin & Pennington, architects, of Baltimore, are in charge.

Baldwin, Ga.—Hotel.—It is proposed to form company to build hotel. W. D. Lewis can give information.

Baltimore, Md.—Institution.—House of Correction will not award contract for building annex, but the State will do the work, using in part convict labor. John Waters, Centre and St. Paul streets, will supervise the work, plans for which were prepared by Baldwin & Pennington. Appropriation available is \$90,000.

Baltimore, Md.—Depot.—Northern Central Railway Co., through J. J. Walsh & Sons, contractors, have permit to erect additional story on Union Station; about \$15,000 will be expended.

Baton Rouge, La.—Bank Building.—Bank of Baton Rouge has received plans from W. L. Stevens & Co. of Crowley, La., for con-

struction of office building, sixty-four rooms, to cost \$70,000.

Bessemer, Ala.—Business Building.—T. J. Cornwell has let contract for erection of \$5000 brick business building.

Birmingham, Ala.—Hospital.—Drs. Talley & McAdory will erect two-story frame building to cost \$10,000.

Birmingham, Ala.—Mercantile Building.—J. M. Caldwell, mentioned last week to erect \$12,000 building, is of 2015 First avenue. Miller & Martin, Hood Building, are architects in charge, and contract has been let to A. J. Krebs Co.

Chattanooga, Tenn.—Hotel.—Lookout Mountain Inn Co. has reorganized with E. J. Fleming of Boston, president; M. S. Gibson of Lookout Mountain, vice-president, and R. C. Marshall of Boston, secretary, and with capital of \$125,000. It intends to make extensive improvements to Lookout Mountain Inn and complete the building as originally planned.

Chattanooga, Tenn.—Dwellings.—Mrs. Gertrude Whiteside has permit to erect two-story double brick residence to cost \$5000.

Clarksburg, W. Va.—Residence.—W. W. Stewart will erect residence to cost \$6000. Gladden & Offner will prepare the plans.

Chicks Springs, S. C.—Hotel.—A company will be organized with Thos. F. McMauns of Greenville, S. C., president, for building a hotel of 100 rooms, equipped with electric lights, steam laundry, elevators, etc.

Cuero, Texas.—City Hall.—City will expend \$15,000 for erection of City Hall. Address "The Mayor."

Denton, Md.—Office Building.—Denton National Bank has accepted plans by F. E. & W. R. Davis of Baltimore for proposed \$17,000 bank building.

Eureka Springs, Ark.—Hotel.—L. G. Greene of Hot Springs, Ark., proposes building hotel at Eureka Springs.

Fitzgerald, Ga.—City Hall.—City will build hall, barracks and firehouse to cost \$7000. Thos. Wilson is mayor.

Greenville, Miss.—Bank Building.—Greenville Savings Bank will erect an office building.

Greenville, Miss.—Hotel.—Cowan Hotel has adopted plans for a 30-room addition and let contract to Charles Pearce of Indianapolis, Ind., at \$20,000.

Gulfport, Miss.—Courthouse.—Harrison county has given notice that \$40,000 worth of bonds will be issued for the purpose of building courthouse, for which plans and specifications are asked. Address "County Clerk."

Jackson, Miss.—Hotel.—I. C. Enoch has received plans for construction of \$50,000 hotel.

Lancaster, Ky.—Parsonage.—Wm. King of Danville, Ky., has contract to build parsonage at Lancaster.

Lynchburg, Va.—Business Building.—Adams Bros. & Payne Co. will erect brick building to cost \$6000.

Madisonville, Ky.—Office Building.—Kentucky Bank & Trust Co. has awarded contract to Korbes & Bro. of Hopkinsville, Ky., for erection of office building to cost \$17,000.

Martinsburg, W. Va.—Mercantile Building.—J. H. Hobbs, Jr., expects to build mercantile and hall building, and is desirous of obtaining plans and specifications.

Miami, Fla.—Business Block.—Fraternal Union of America, J. C. Beck, local secretary, will erect three-story business block 55x100 feet to cost about \$17,500.

Miami, Fla.—Courthouse.—Circuit Court, E. C. Dearborn, clerk, will open bids October 7 for construction of courthouse according to plans, etc., of Wilson & Edwards of Columbia, S. C. Plans can be seen at architects' offices.

Mobile, Ala.—Depot.—Louisville & Nashville Railway (R. Montford, chief engineer, Louisville, Ky.) is reported as to begin construction of proposed depot and several thousand feet of wharfage.

Mt. Pleasant, Tenn.—Bank Building.—Bank of Mt. Pleasant will erect office building.

New Berne, N. C.—Warehouse.—E. H. & J. Meadows will build guano warehouse 75x273 feet, after plans by N. W. Simpson.

Opelika, Ala.—School.—City will build \$16,000 school building. President board of education can be addressed.

Orange, Texas.—Apartment-house.—J. H. Betts has awarded contract for erection of apartment-house.

Palestine, Texas.—Hotel.—Company will be formed to build \$50,000 hotel. Mrs. Emma Nolen will lease building.

Port Deposit, Md.—Church.—W. L. Plack of Philadelphia, Pa., has drawn plans for proposed church building; J. H. Rowland, chairman of committee.

Rockville, Md.—Grandstand.—Mobley & Harris have contract at \$3500 to build grandstand 45x100 feet, to seat 1200.

St. Louis, Mo.—Commercial Building.—David Young & Sons propose erecting a \$150,000 commercial building.

Sumner, Miss.—Courthouse.—Tallahatchie county will issue \$50,000 bonds for construction of courthouse and jail. Address "County Clerk."

Tampa, Fla.—Government Building.—Cramps & Co. of Philadelphia, Pa., have contract at \$283,000 for erection of government building.

Tyler, Texas.—School.—City has let contract for erection of \$6500 school building. Address "The Mayor."

Williamsport, Md.—Hotel.—Geo. W. Hurd proposes building hotel.

RAILROAD CONSTRUCTION.

Railways.

Alexandria, La.—The Little River Valley Railway Co. has been organized to build a railroad from Georgetown, on the St. Louis, Iron Mountain & Southern, through Grant and Winn parishes northerly, and also to run southwestwardly through Grant and Catahoula parishes. Stephen R. Lee of Pollock is president; William C. Beall of Georgetown, vice-president, and James Oshee of Alexandria, secretary and treasurer. Otto H. Cooper, Edward R. Cooper and William Hefflin of Georgetown are also interested; headquarters at Alexandria.

Atlanta, Ga.—It is rumored that the Seaboard Air Line may build a connection from Atlanta to Macon, ninety miles, to connect with the Macon, Dublin & Savannah road, and thus, in connection with the East & West Railroad of Alabama, recently purchased and now being improved, make a short through route from Birmingham via Atlanta and Macon to Savannah; W. W. Gwathney, Jr., chief engineer, Portsmouth, Virginia, Vice-President J. M. Barr writes to the Manufacturers' Record that there is no truth in the statement that the Seaboard contemplates a connection from Atlanta to Macon.

Atoka, I. T.—The survey for the electric line from Atoka to Colegate is reported complete. C. W. Copeland is president.

Austin, Texas.—The Brady Construction Co. of St. Louis, Mo., with office at Brownwood, Texas, has been granted authority to build railroads in Texas, presumably the extension for the St. Louis & San Francisco.

Baltimore, Md.—It is reported that the Western Maryland Railroad Co. has secured more than 125 acres of land in South Baltimore on the Patapsco river for tidewater terminals; F. S. Landstreet, vice-president and general manager, Baltimore, Md.

Birmingham, Ala.—Mr. John L. Burns, vice-president and superintendent of construction of the Southern Industrial Co., Birmingham, Ala., writes the Manufacturers' Record that the matter of building the Birmingham & Steel Cities Railway is in the hands of the board of directors and the Southern Industrial Co., and that they have the work under way.

Chicago, Ill.—President Stuyvesant Fish of the Illinois Central Railroad is quoted as saying that the company will soon issue \$15,000,000 of new stock for improvements.

Clarksville, Tenn.—Surveyors are now locating the line for the Nashville & Clarksville Railway, the extension of the Tennessee Central to Clarksville; Jere Baxter, president, Nashville, Tenn.

Cleburne, Texas.—The survey for the railroad in which G. A. Human is interested has been completed between Cleburne and Fort Worth.

Cumberland, Md.—Joseph MacCarroll, president of the Penn State Construction Co., 735 Drexel Building, Philadelphia, writes to the Manufacturers' Record saying that "the electric road between Frostburg and Lonaconing is nine miles long, and is being operated as far as Upper Ocean, about three miles. Expect to have work all completed by November 1. We also have contract for a road between Lonaconing and Westernport, on which we expect to commence work early next spring."

Denison, Texas.—It is reported that track-laying has begun on the Missouri, Kansas & Texas Southwestern extension at Stevens, I. T., a tracklaying machine being employed.

Elkton, Md.—Edwin R. Cochran of Wilmington, Del., president of the Kent & Cecil Light, Power & Railway Co., has applied to the county commissioners for a franchise for the railroad in Cecil county. The Tennis Construction Co. of Philadelphia, of which E. A. Tennis is president, is said to be ready

to build the road. The city council has granted right of way through Elkton.

Ellmore, S. C.—It is proposed to build a railroad from Ellmore to Pinckney's Landing, six miles. W. F. Stack is interested.

Frederick, Md.—Frank H. Callaway and James E. Ingram, Jr., of Baltimore are reported to be securing rights of way for the Baltimore & Frederick Electric Railway Co.

Galeton, Pa.—Mr. J. M. Carpenter writes to the Manufacturers' Record that a company in which he is interested has 42,000 acres of land in Monroe county, Tenn. It has not yet been fully decided when the property will be developed, but preliminary surveys are being made for a railroad. It is reported the line will connect with the Southern Railway at Maryville, in Blount county.

Goodwater, Ala.—Mr. C. F. Lawrence, superintendent of construction of the Central of Georgia Railway Co., writes to the Manufacturers' Record regarding the survey for a line from Goodwater, Ala., to Carrollton, Ga., and says that the company is only making preliminary surveys at present.

Houston, Texas.—Mr. W. G. Van Vleck, vice-president and manager of the Texas & New Orleans Railroad Co., writes to the Manufacturers' Record saying that so far as he knows, the Southern Pacific is not interested in the movement to secure a railroad from Palestine to Greenville, Texas.

Houston, Texas.—A surveying corps is reported at work between Houston and La Porte for an electric line to the bay shore. Judge Allen of Houston is interested.

Houston, Texas.—The Velasco, Brazos & Northern Railroad Co. has, it is reported, been formally transferred to C. C. Waller and E. P. Spears, associated with whom are said to be Chicago capitalists. It is to be improved and extended from Archer to Hempstead.

Jacksboro, Texas.—The Chicago, Rock Island & Texas Railway has begun construction of its extension from Jacksboro to Graham; J. S. Peter, chief engineer, Fort Worth, Texas.

Kaufman, Texas.—It is proposed to build a railroad from Tyler to Kaufman. Among those interested are Mayor George Shaw, James Young, W. A. Nash, T. E. Turner, Dr. W. J. Pollard and Major E. S. Pipes.

Knoxville, Tenn.—Eddington, Groner & Griffiths have received a contract for twelve miles of line of the Knoxville, Laffollette & Jellico Railroad between Knoxville and Beaver Creek. Kellar & Griffith get the contract for the bridge work between Beaver Creek and Laffollette Junction.

Knoxville, Tenn.—The contract for building the Knoxville, Laffollette & Jellico Railroad from Laffollette to Beaver Ridge, near Knoxville, twenty-eight miles, has been let to Mason & Hoge of Lexington, Ky., and St. Louis, Mo., and Wilson, Walton & Co. of Roanoke, Va. Work has already begun.

Knoxville, Tenn.—The Knoxville, Kimberlin Heights & Sevierville Electric Railway has completed its survey, and the contract will, it is reported, soon be awarded; E. N. Harris, engineer.

Lancaster, Ky.—Col. L. F. Hubble and others of Lancaster are interested in a railroad to be built from Corbin to Celina, Tenn., via Burnside, Monticello and Albany, Ky., and Byrdstown, Tenn.

Lexington, Ky.—The Bluegrass Traction Co. has been granted a franchise for an electric railway between Lexington and Paris.

Manatee, Fla.—The proposed electric railroad is to run from Manatee to Fogartyville, taking in Braden Castle and Bradentown. Among those interested are John Graham of Chicago, and ample capital is said to have been secured for the line.

Marianna, Ark.—Mr. John M. Daggett writes to the Manufacturers' Record that the proposed Brinkley & Marianna Railroad is expected to be organized in a week or ten days. It is to connect with the Choctaw division of the Rock Island system.

Marshall, Mo.—R. D. Burchard and others are interested in a plan to build an electric line about fifty miles long. Mr. Burchard, who is secretary of the Saline Oil & Developing Co., writes to the Manufacturers' Record that the road will run from Miami, Mo., south through Marshall and on to Sedalia, serving a fine agricultural and stock-raising country.

Martinsburg, W. Va.—The Baltimore & Ohio Railroad Co. has begun improving its yards in Martinsburg for the transfer of freight to the Cumberland Valley Railroad, to begin September 1. It is reported that five new tracks, each two and one-half miles long, will be laid from the Martinsburg yard to Fawnier.

Memphis, Tenn.—The Louisville & Nashville Railroad has applied to the city council

for permission to build a connecting line which would give it its own belt line; R. Montfort, chief engineer, Louisville, Ky.

Memphis, Tenn.—J. W. Buchanan, president of the Nashville & Mississippi Delta Railroad Co., writes to the Manufacturers' Record as follows: "We will commence work at an early day from Okolona, on the Mobile & Ohio road, and build this year about thirty miles of road."

Mexico, Mex.—Preliminary surveys are being made for the Decauville Railway from Ameca, at the terminus of the Mexican Central Guadalajara division, to Mascota, on the Pacific coast.

Mineral Wells, Texas.—The Texas & Pacific Railway has, it is reported, secured control of the Weatherford, Mineral Wells & Northwestern Railroad, and will extend it; B. S. Wathen, chief engineer, Dallas, Texas.

Nashville, Tenn.—It is reported that W. J. Oliver & Co. have been awarded by the Tennessee Central Railroad the contract for seven miles of belt line around Nashville.

New York, N. Y.—Mr. James B. Colegrove, president of the Washington, Westminster & Gettysburg Railroad Co., 20 Broad street, writes to the Manufacturers' Record that the line of the road will run from a "connection with the Baltimore & Ohio at Washington Grove, Montgomery county, Maryland, in a northerly direction through or near the following towns, cities and villages, viz., Laytonsville, Etchison, Damascus, Ridgeville, Unionville, Mt. Airy, Taylorsville, Dennings, Warefieldsburg, Westminster, Stonerville, Pleasant Valley, Frizzelburg, Tyrone, Mayberry, Littlestown, Weist's Mills, Smith's Mills, Two Taverns and Fiscel's, to Gettysburg, Pa."

Norfolk, Va.—The Chesapeake Transit Co. has applied to the city council for a right of way, and it is understood that the company proposes to build a four-track steam railway through the city of Norfolk. J. Edward Cole is counsel for the road.

Oklahoma City, Okla.—Mayor Jones has, it is reported, purchased the Arkansas Valley & Western Railroad for Eastern capitalists, who will build it from Red Fork, in the Creek Nation, I. T., to Enid, Okla.

Palestine, Texas.—Prominent business men of Dallas have notified business men of Palestine that they are ready to help finance a branch railroad from Palestine to connect with the Texas & New Orleans Railroad.

Parsons, W. Va.—The Clover Run Lumber Co. is building a six-and-one-half-mile standard-gauge railroad.

Pine Bluff, Ark.—Burk Bloom, county clerk, has received a letter inquiring regarding the prospects for a proposed railroad to Pine Bluff. The would-be builders have requested that their identity be kept secret.

Roanoke, Va.—It is reported that the first contract for the extension of the Norfolk & Western Railway up Big Sandy river has been awarded to K. C. Carpenter of East Radford, Va. It is for eighteen miles on the Kenova end and ten miles on the other end of the line.

Roanoke, Va.—Mr. Charles G. Churchill, engineer of maintenance of way of the Norfolk & Western Railway Co., writes to the Manufacturers' Record regarding the report that the company would extend its terminals at Bluefield. He says that the only work the company is doing there is the construction of a coal wharf under the Link-Belt Engineering Co.'s system.

Roanoke, Va.—The Norfolk & Western Railway will, it is understood, immediately resume construction on the Cripple Creek extension, twenty miles long; Charles G. Churchill, engineer maintenance of way, Roanoke, Va.

Savannah, Ga.—Mr. T. D. Kline, general superintendent of the Central of Georgia Railway Co., writes to the Manufacturers' Record that he has not been informed as to the permanent location of the new army post near Chickamauga, and can give no information regarding track to the post. With reference to the same subject Mr. J. L. McCollum, superintendent of the Western & Atlantic Railroad, says that no steps have been taken to build the line to the post, so far as he is advised.

Sherman, Texas.—W. L. Lemmon is quoted as saying that the electric line between Sherman and Denison may be extended to Dallas via McKinney.

Slatington, Ark.—The Southwestern Slate Manufacturing Co., of which Curtis Wright of Carthage, Mo., is president, will, it is reported, build a railroad from its slate quarries at Slatington, fifty-six miles to Hot Springs.

St. Louis, Mo.—It is reported that the Missouri Pacific Railway will extend the Granby branch to connect with the White River

branch. H. Rohwer is chief engineer, St. Louis, Mo.

Tellico Plains, Tenn.—Tellico Mineral & Railway Co. (articles of incorporation now being prepared) will build about five miles of steam railway as the initial work of developing its property of about 40,000 acres of mineral land, etc., just acquired last week. Address company, care of Chas. A. Weller, Knoxville.

Urania, La.—The Natchez, Urania & Ruston Railway will, it is reported, build an extension from Urania to Harrisonburg, about thirty miles; Henry E. Hardtner, president and general manager, Urania, La.

Victoria, Texas.—The Southern Pacific is making a survey to lay a spur track to the rice lands of the Victoria Rice & Irrigation Co., one and one-half miles long; W. G. Van Vleet, general manager, Houston, Texas.

Waco, Texas.—A movement has begun to secure construction of a direct line from Waco to Austin by the International & Great Northern Railroad Co. The Business Men's Club of Waco is interested; J. D. Trammel, chief engineer at Palestine, Texas.

Waco, Texas.—It is reported that the Texas Central Railroad will, in consequence of the flood, adopt a new route along Steele creek, constructing an entirely new line for some distance; C. Hamilton, general manager; W. C. Beach, resident engineer.

Street Railways.

Berkley, Va.—The Berkley Street Railway Co. is considering a plan to build an extension.

Biloxi, Miss.—E. C. Joulian of Biloxi has applied to the city council for a street-railway franchise.

Chattanooga, Tenn.—It is reported that the Chattanooga Electric Railway is to begin construction next week on the Rossville extension, one and one-half miles.

Fort Worth, Texas.—The Citizens' Electric Railway Co., in which Capt. J. T. Voss and others are interested, will apply to the city council, it is understood, for a franchise.

Jacksonville, Fla.—The board of public works has granted permission to the Street Railway Company to rebuild its tracks on Bay street from Bridge street east to Market street. Additional double track is to be laid on other streets.

Nashville, Tenn.—Percival Moore of Louisville, Ky., has offered \$10,000 to the city council for an electric railway franchise in Nashville.

New Martinsville, W. Va.—The New Martinsville Electric Light, Heat & Power Co. is seeking a franchise for a street railway from the town council.

Sherman, Texas.—George Murphy, R. E. Smith, N. B. Birge, S. W. Porter and R. J. Cunningham have applied to the city council for a street-railway franchise.

St. Louis, Mo.—Dr. W. Carl Feld, E. H. Davis, A. H. Weremeyer, W. W. Hopez, R. C. Giers and others have applied for a franchise for the West Olive Street Railway Co. to build a double-track railroad out the Olive street road from the city limits to Creve Coeur Lake.

Talladega, Ala.—Mr. George W. Chambers writes to the Manufacturers' Record that Collier & Brown of Atlanta are the engineers in charge of the survey for the proposed electric line for which all rights of way have been secured.

Texarkana, Texas.—The Texarkana Traction Co. has been organized, with \$100,000 capital. The directors are E. J. Spence and T. W. Crouch of St. Louis, and J. S. Tritle and R. W. Rodgers of Texarkana.

Machinery, Proposals and Supplies Wanted.

Manufacturers and others in need of machinery of any kind are requested to consult our advertising columns, and if they cannot find just what they wish, if they will send us particulars as to the kind of machinery needed we will make their wants known free of cost, and in this way secure the attention of machinery manufacturers throughout the country. The MANUFACTURERS' RECORD has received during the week the following particulars as to machinery that is wanted.

Barrel Machinery.—See "Woodworking Machinery."

Boiler and Engine.—See "Lumber Plant."

Boiler and Engine.—See "Mining Equipment."

Boiler and Engine.—V. M. McCarty, Mid-

vale, Va., wants 20-horse-power engine, four-inch high-service pump and boiler large enough to operate both machines at once.

Boiler and Engine.—See "Woodworking Machinery."

Bridge.—Town of Luray, Va., will open bids August 25 for construction of steel bridge 125 feet long, roadway eighteen feet wide in the clear, sidewalk six feet wide in the clear. Plans and specifications are on file with mayor, T. R. Campbell.

Bridge.—John H. Ferguson, chairman of committee, Rocky Mount, Va., will open bids September 1 for construction of stone piers, foundations and steel spans, separately, for four steel bridges. Specifications on file.

Building Equipment, etc.—Dorsey Printing Co., Dallas, Texas, has not yet let contract for elevators, sprinkler system, heating, lighting or plumbing.

Building Supplies.—Geo. W. Muller, 43 Terry street, Atlanta, Ga., will need building materials and plumbing fixtures.

Building Tiles.—Hanna & Kalmbach, New Orleans, La., want hollow building tile. Manufacturers please quote sizes and prices f. o. b. cars at New Orleans in less than carload lots.

Canning Supplies.—Monticello Canning Co., Monticello, Ark., will need large copper peach syrup kettle.

Chemists' Mills.—McCormick & Co., 44 South Charles street, Baltimore, Md., will need some spice and drug mills.

Cotton Machinery.—Henri Delaplace, engineer, Rue Verte 71, Rouen, Normandy, France, wants catalogues and prices, illustrations and all other particulars regarding American spinning and weaving machinery. He desires to obtain full information with a view to introducing American equipment into France.

Cotton Waste.—Southern Car Manufacturing & Supply Co., Main and Bowie streets, Beaumont, Texas, wants addresses of manufacturers of cotton waste.

Dry Mills.—See "Chemists' Mills."

Dry-kiln.—Gurney Manufacturing Co., Roan Mountain, Tenn., wants moist-air dry-kiln.

Dry-kiln.—Gurney Manufacturing Co., Roan Mountain, Tenn., will want moist-air dry-kiln.

Dump Carts and Barrows.—See "Hoisting Machinery."

Electric-light Plant.—City of Fayetteville, N. C., wants bids on electric-light plant—fifty are and 3000 incandescent lamps. Plans and specifications can be had by applying to "The Mayor," or to chairman of light committee, N. B. Alexander.

Electric-light Plant.—Mt. Airy, N. C., wants to grant franchise for water-works and electric lights. It has water-power to be used. Address J. C. Hollingsworth, secretary.

Electric-light Plant.—Lexington Ice, Light & Water Co., Lexington, Miss., will probably want electric-light plant.

Electric Motor.—Wight Manufacturing Co., Chattanooga, Tenn., wants four or five-horse-power motors, 500 volts, about 1500 revolutions; second-hand will do.

Elevator.—Shelby Store & Manufacturing Co., Shelby, Ohio, wants second-hand power elevator for two-story building.

Elevator.—Frank M. Bell, El Paso, Texas, wants belt-driven elevator complete, entire lift fifty-six feet, car platform 7x3 feet, maximum load 5000 pounds, either overhead lift or sheave to first floor ceiling lift.

Engine.—J. C. Lipscomb & Co., Gaffney, S. C., want to correspond with manufacturers of portable gasoline engines of about six horse-power.

Engine.—J. F. Kollock, Clarksville, Ga., wants an eight-horse-power gasoline engine for farm use.

Engine.—F. O. Ketcham, 272 North Harwood street, Dallas, Texas, wants traction engine to develop thirty horse-power and furnish steam to make 8000 feet of hardwood lumber in ten hours; second-hand will do.

Engines.—Cameron & Barclay Co., Charleston, S. C., wants quotations (dealers') on two gasoline engines, twelve to fifteen horse-power; second-hand will do.

Foundry Equipment.—See "Machinery Works."

Ginnery Supplies.—Wm. Jackson, Frost, Ga., wants gin-saw filer and gummer.

Grinding Machinery.—Forestry Chemical Co., Dalton, Ga., wants machine to grind cordwood and edgings.

Hoisting Machinery.—E. H. & J. A. Meadows Company, New Berne, N. C., will want system of overhead automatic track and hoisting buckets, barrows and dump carts.

Hydraulic Rams.—See "Pumping Machinery."

Ice Plant.—Vaughan & Fuller, Winchester, Tenn., wants information and prices on small ice plant.

Ice Plant.—Lexington Ice, Light & Water Co., Lexington, Miss., will probably want 10-ton ice plant.

Laundry Equipment.—Vaughan & Fuller, Winchester, Tenn., want information and prices on complete steam laundry.

Lumber Plant.—See "Traction Engine."

Lumber Plant.—Oakview Lumber Works, Poulan, Ga., will need 25 or 30-horse-power boiler and engine, cut-off saw, head box, trucks, etc., for building saw carriage, and 150 feet of wire cable.

Machinery Works.—Kay-Pim Manufacturing Co., 241 Magnolia avenue, Chicago, will be in the market for complete equipment for manufacturing power-transmission, elevating and conveying machinery.

Machine-shop Equipment.—See "Machinery Works."

Machine Tools.—W. M. Ritter Lumber Co., Saginaw, N. C., wants engine lathe twenty-six inches by ten feet; second-hand preferred.

Machine Tools.—Petersburg Iron Works Co., Petersburg, Va., wants delivered quotations for immediate delivery on one combined punch and shear to punch seven-eighths-inch hole in five-eighths-inch plate, 25-inch throat, and to shear one-half-inch plates, 25-inch throat.

Mattress Machinery.—Memphis Furniture Manufacturing Co., Memphis, Tenn., wants machine to make mattress felts for all-cotton mattresses.

Mattress Machinery.—Augusta Mattress Manufacturing Co., 210 Kollock street, wants mattress machinery.

Mining Equipment.—Pratt Coal Co., Birmingham, Ala., will need boilers, hoisting engines, rails, hand cars, etc.

Mining Equipment.—Harold P. Davis, 68 Wall street, New York, wants 60-horse-power engine, boiler to suit, ore washer, sand screen, elevator, 2000 feet of four-inch pipe (iron or wire woven wood), etc.

Oil Mill.—Fred Oliver, Portsmouth, Va., will need all kinds of oil refinery and cottonseed delinting machines.

Pulley Manufacturers.—Standard Supply Co., Wilmington, N. C., wants to correspond with split-steel manufacturers with a view to representing them; will order one carload when contract is signed.

Pumping Machinery.—J. C. Rickards, Balsam, N. C., wants catalogues and prices on hydraulic rams and other small pumping outfits.

Pumps.—See "Boiler and Engine."

Railway Equipment.—R. B. Burchard, Marshall, Mo., wants information and estimates on construction of 50-mile electric railway and all necessary equipment.

Refining Machinery.—See "Oil Mill."

Roofing.—J. H. Sale, president Louisville & Portsmouth Fire-Brick Co., Louisville, Ky., wants corrugated iron for buildings.

Sewerage System.—See "Water-works."

Sewerage System.—Town of Berkley, Va., will open bids August 21 for constructing its sewers after specifications, etc., obtainable on application; plans and profiles are on view at office of town engineer; bond for \$8000 will be required from successful bidder; J. H. Jacobs, chairman of improvement board.

Shafting, etc.—W. C. Stewart, Moundsville, W. Va., will purchase shaftings, belting, etc.

Spring Machinery.—See "Mattress Machinery."

Steel Stack.—St. Petersburg, Fla., wants one stack 75 feet high, 44 inches diameter, with east baseplate made of No. 8 steel. Address A. P. Weller, manager, 259 Summers street, Paterson, N. J.

Traction Engine.—See "Engine."

Wagon-material Machinery.—Cedar Bluff Mercantile Co., Cedar Bluff, Va., wants machinery to make wagon hubs.

Water-works.—See "Electric-light Plant."

Water-works.—City of Lawton, O. T., will open bids August 15 for construction of water-works and sewerage system. L. P. Ross and others of council committee can be addressed.

Water-works.—City of Weatherford, Texas, will want machinery supplies, etc., for constructing water-works. For specifications and other information address chairman of water-works committee, J. T. Cotten.

Water-works Construction.—American Pipe Manufacturing Co., 112 North Broad street, Philadelphia, Pa., will open bids August 15 for construction of combined earth and timber crib dam, timber lock, 2,000,000-gallon clear-water basin and a 10,000,000 settling basin to be located about eleven miles from

Charleston, S. C. Copy of plans and specifications on application.

Well-drilling Equipment.—East Tennessee Oil, Gas & Pipe Line Co., Thos. R. Price, president, 600 McGhee street, Knoxville, Tenn., will probably want pipe, pumps, tanks, well-drilling equipment, etc.

Well-drilling Machinery.—J. H. Durham, Morehead, Ky., wants machine for drilling oil wells to depth of 1200 to 1600 feet.

Well-drilling Machinery.—Dallas-Sour Lake Oil Co., F. T. Collins, secretary, Dallas, Texas, will soon want machinery for drilling and pumping oil wells, etc.

Well-drilling Outfit.—Mustang Oil & Gas Co., R. H. Dunn, secretary, Mustang, O. T., will need well-drilling outfit to go 1500 or 3000 feet deep; second-hand will do.

Wire Cable.—See "Lumber Plant."

Woodworking Machinery.—Jack Garst, Boone Mill, Va., wants flour barrel heading machine.

Woodworking Machinery.—W. D. Lewis, Baldwin, Ga., wants prices on crate-factory machinery.

Woodworking Machinery.—Thos. W. Pence, Goods Mill, Va., wants machinery to manufacture insulator pins.

Woodware Machinery.—Merry Bros., Augusta, Ga., want prices on basket, box and veneer machinery and general equipment.

Woodworking Machinery.—Longview Crate & Woodware Manufacturing Co. expects to buy engine, boiler and machinery for wood-ware factory.

Woodworking Machinery.—American Machinery & Export Co., 120 Liberty street, New York, wants a four-side heavy planer to handle timber 12x16 inches, new or second-hand. Full particulars requested.

Woodworking Machinery.—W. A. Baker, Dublin, Ga., wants medium-sized surfacer about 6x15, improved molders, interior finisher, edger, boiler, engine, shafting, belting, pulleys, etc.

TRADE LITERATURE.

Woodworking Machinery.—The 620-page cloth-bound volume sent out by the H. B. Smith Machine Co., Smithville, N. J., in describing its extensive line of woodworking machinery, is about as elaborate a piece of advertising matter and as good an evidence of progressive business methods as any firm could produce. This is the fifty-fifth edition of the Smith Company's twentieth-century catalogue. From all that can be learned, the woodworking machinery which it illustrates so admirably is in no way behind the volume. The introduction consists of twenty pages of illustrations of medals and awards from various expositions at which the Smith Company exhibited.

The Gravity Dam.—From the Beardsley Gravity Dam & Construction Co., 205 South Main street, Elkhart, Ind., comes a book on the "Gravity Dam," written by Mr. E. R. Beardsley. This book will be found of interest to engineers, dam builders and all parties interested in a safe and reliable dam. Mr. Beardsley treats at length the principal causes of dam failures, and then outlines his own method of construction, which has proved so successful. There is certainly logic in his method, backed by experience and technical knowledge. The Beardsley Company has closed contracts with the Salinas Sugar Refining Co., Detroit, and the Stanton Water-Power Co., Stanton, Neb., and has just finished a dam for the Caro Light & Power Co., Caro, Mich.

In Pell City.

In a letter to the Manufacturers' Record Mr. Sumter Cogswell, president of the Pell City (Ala.) Realty Co., writes:

"Pell City is growing very rapidly. The new courthouse, a very handsome brick building, is nearly completed, and a very substantial jail has been built. The Pell City Manufacturing Co.'s building for the denim mill is in course of construction, the material being delivered directly upon the mill site by a side track of the Southern Railway. The Seaboard Air Line's side track will be constructed at once, and will be used also by the Birmingham & Atlanta Railway. Pell City will soon have a tannery and a saddlery, land for these establishments having been bought by a Mr. Mitchell of Carrollton, Ga. Hardwick & Sons of Easonville, Ala., will remove their flour mill to Pell City this fall. A planing mill and a brick-yard are badly needed. Both of these would pay handsomely.

FINANCIAL NEWS.

The Manufacturers' Record invites information about Southern financial matters, items of news about new institutions, dividends declared, securities to be issued, openings for new banks, and general discussions of financial subjects bearing upon Southern matters.

Review of the Baltimore Market.

Office Manufacturers' Record, Baltimore, Md., August 13.

Seaboard Air Line Railway stock has been a great feature of the Baltimore stock market during the past week, and the steady advance in the price of both the common and preferred has been accompanied by very heavy dealings. At the beginning of the period it was reported that the stock was being purchased by a New York house as fast as could be picked up, and this stimulated interest in the issues, with the result that the transactions became so great as to practically monopolize the market. It was also reported that the Gould lines were seeking connection with the Seaboard in the South, and that the Gould and Seaboard systems might be connected by constructing a line from Birmingham, Ala., where the Seaboard has recently obtained a foothold, to Memphis, Tenn., where Mr. Geo. Gould has recently acquired control of the Belt Line Railway, and is now rapidly completing the Missouri Pacific extension, which is to connect Memphis with New Orleans. This rumor is unconfirmed, but it was also reported that the Seaboard would soon announce some important extensions or improvements. All this gossip excited general interest, and the course of the stock was steadily upward.

Another matter of interest in the market was the difference between the Stock Exchange and the Mt. Vernon-Woodberry Cotton Duck Co., which was settled by the company issuing another notice that it would pay the interest on the income bonds upon the presentation of interest warrant No. 5, covering the period from January 1 to June 30, inclusive, and thus permitting the bondholders to retain warrant No. 4, covering the period from July 1, 1901, to December 31, inclusive, interest for that period not having been paid. This action is in harmony with the decision of the Stock Exchange that the bonds would not be considered a good delivery unless unpaid interest warrants were attached.

In the trading Seaboard common started the week at 28½, and rose, practically uninterrupted, to 34½, but reacted fractionally to 33½. The preferred started at 48½ and progressed steadily upward to 55, reacting to 54½. The 4 per cent. bonds sold between 86½ and 87½, the rise being held, while the 5 per cent. bonds moved between 104½ and 104¾. Cotton Duck common sold from 9 to 9½; the income bonds from 47½ to 48½, and the 5 per cent. bonds from 83½ to 84½. United Railways common sold at 16 to 16½; the income bonds from 70½ to 70¾, and the 4 per cent. bonds from 97½ to 98. There were no transactions in Light & Power preferred or in the 4½ per cent. bonds. Consolidated Gas sold at 70 and 70½, and the 6 per cent. at 112. G. B. & S. common sold at 16; the incomes at 43½, and the scrip at 42½, while the 1sts changed hands at 53½.

The trust-company group of stocks was rather quiet, but Union advanced from 71½ to 75 in the dealings, while International rose from 137½ to 138½; Continental sold at 216, Maryland at 205 and Colonial at 32¼ and 32½, while United States Fidelity & Guaranty was dealt in at 146 and 146½. Old Town Bank sold at 11, and Union Bank at 119.

Other securities dealt in were as follows: Nashville Railway common at from 5½ to 5¾; the 5 per cent. certificates

between 73% and 74%; Northern Central at 124½ to 125; Merchants & Miners' Transportation Co. at 175; City & Suburban 5s at 114½; Virginia Railway & Electrical Development 5s at 97 and 97½; Virginia Midland 1sts at 100; Virginia Centuries at 96; Atlantic Coast Line common at 160 to 160½; Potomac Valley 5s at 118½ and 118¾; Georgia & Alabama Consolidated 5s, 112¾; Georgia Southern & Florida 5s, 114¾; South Bound 5s at 113; Baltimore Traction 5s at 117¾; Atlantic Coast Line of Connecticut, 284½; Atlantic Coast Line of Connecticut 4s, 97½; Charleston Consolidated Electric 5s at 94½; Norfolk Railway & Light 5s at 95½; Northern Central 5s, Series A, 12½; West Virginia Central 6s, 113 and 113½; Baltimore City Passenger 5s, 110½; Alabama Consolidated Coal & Iron preferred, 86½; Norfolk Railway & Light stock, 13; Northern Central 6s, 104½; City & Suburban (D. C.) 5s, 100½, and Canton Company stock, 103.

SECURITIES AT BALTIMORE.

Last Quotations for the Week Ended August 13, 1902.

Railroad Stocks.	Par.	Bid.	Asked
Atlanta & Charlotte.....	100	167½	...
Georgia Southern & Florida.....	100	48	...
Georgia Sou. & Fla. 1st Pref.....	100	100	...
United Railways & Elec. Co.....	50	16	16½
Seaboard Railway Common.....	100	33½	34½
Seaboard Railway Preferred.....	100	48½	54½
Atlantic Coast Line of Conn.....	100	284	285

Bank Stocks.	Par.	Bid.	Asked
Citizens' National Bank.....	10	32	...
Commercial & Far. Nat. Bank.....	100	134	142
Farmers & Mer. Nat. Bank.....	40	69	75
German Bank.....	100	107	...
Manufacturers' National Bk.....	100	102½	105
National Bank of Commerce.....	15	28	...
National Exchange Bank.....	100	193	194
National Howard Bank.....	10	7	12
National Mechanics' Bank.....	10	...	33
Old Town Bank.....	100	19	11½
Second National Bank.....	100	130	...
Third National Bank.....	100	132	135
Western National Bank.....	20	39½	40½

Trust, Fidelity and Casualty Stocks.	Par.	Bid.	Asked
Colonial Trust.....	50	32	32½
Continental Trust.....	100	...	216
International Trust.....	100	138½	139
Maryland Casualty.....	25	54	55
Maryland Trust.....	100	202	205
Mercantile Trust & Deposit.....	50	165	...
U. S. Fidelity & Guaranty.....	100	146	...

Miscellaneous Stocks.	Par.	Bid.	Asked
G. B. & S. Brewing Co.....	100	16	17
United Elec. L. & P. Pref.....	50	...	41
Cotton Duck Voting Trust.....	100	9¼	9½
Consolidated Coal.....	100	79	81
Consolidated Gas.....	100	70	70½
Atlantic Transport.....	100	270	...

Railroad Bonds.	Par.	Bid.	Asked
Atlanta & Charlotte 1st 7s, 1907.....	112	...	112
Georgia, Car. & North 1st 5s, 1929.....	112½	...	112½
Georgia South. & Fla. 1st 5s, 1945.....	114½	...	114½
Piedmont & Cum. 1st 5s, 1911.....	109	...	109
Seaboard & Roanoke 5s, 1916.....	115	...	115
Seaboard & Roanoke 5s, 1926.....	115	...	115
Southern Railway Con. 5s, 1904.....	129½	...	129½
Virginia Midland 1st 6s, 1906.....	108	...	111
Virginia Midland 2d 6s, 1911.....	112	...	117½
Virginia Midland 3d 6s, 1916.....	122½	...	125
Virginia Midland 4th 3-4-5s, 1921.....	112	...	115½
Virginia Midland 5th 5s, 1926.....	116½	...	117½
West Virginia Central 1st 6s, 1911.....	113	...	113½
Charleston City Railway 5s, 1923.....	105	...	105
Charleston Con. Electric 5s, 1926.....	94	...	94½
Newport News & Old Pt. 5s, 1938.....	110	...	110
United Railways 1st 4s, 1949.....	97½	...	97½
United Railways Inc. 4s, 1949.....	70½	...	70½
Seaboard 4s.....	87½	...	87½
Seaboard 10-year 5s.....	104½	...	104½
Georgia & Alabama Con. 5s.....	112½	...	113
South Bound 5s.....	112	...	113

Miscellaneous Bonds.	Par.	Bid.	Asked
Mt. V. & Woodby Cot. Duck 5s.....	83¼	...	83½
Mt. V. & Woodby Cot. Duck Inc.....	48	...	48½
G. B. & S. Brewing 1st 4s.....	53½	...	53½
G. B. & S. Brewing 2d Income.....	43	...	43½
United Elec. Light & Power 4½s.....	94	...	96½
Atlanta Gaslight 1st 5s, 1947.....	104	...	104
Consolidated Gas 6s, 1910.....	112	...	112
Consolidated Gas 5s, 1939.....	114½	...	116

SOUTHERN COTTON MILL STOCKS

Quotations Furnished by Hugh MacRae & Co., Wilmington, N. C., for Week Ending August 12.

Abbeyville Cotton Mills (S. C.).....	Bid.	Asked
Aiken Mfg. Co. (S. C.).....	85	82
American Spinning Co. (S. C.).....	100	...
Anderson Cotton Mills (S. C.).....	119	124
Arkwright Mills (S. C.).....	115	125
Augusta Factory (Ga.).....	65	71
Avondale Mills (Ala.).....	82½	...
Belton Mills (S. C.).....	105	...
Bibb Mfg. Co. (Ga.).....	110	...
Bennettsville Mfg. Co. (S. C.).....	91	...
Cabarrus Cotton Mills (N. C.).....	122	...
Clearwater Biehy & Mfg. Co. (Ga.).....	103	...
Clifton Mfg. Co. (S. C.).....	174	177½
Clinton Cotton Mills (S. C.).....	118	...
Courtenay Mfg. Co. (S. C.).....	122	130
Dallas Mfg. Co. (Ala.).....	73	...
Darlington Mfg. Co. (S. C.).....	85	95
Eagle & Phenix Mills (Ga.).....	90	...
Enoree Mfg. Co. (S. C.).....	80	...
Enterprise Mfg. Co. (Ga.).....	90	90
Exposition Cotton Mills (Ga.).....	150	...
Gaffney Mfg. Co. (S. C.).....	101½	...
Graubly Cotton Mills (S. C.).....	101	...

Graubly Cot. Mills (S. C.) 1st Pfd.....	101	102½
Graniteville Mfg. Co. (S. C.).....	150	162½
Greenwood Cotton Mills (S. C.).....	102	...
Grendel Mills (S. C.).....	101½	...
Henrietta Mills (N. C.).....	200	210
King John P. Mfg. Co. (Ga.).....	87½	...
Langley Mfg. Co. (S. C.).....	105	110
Laurens Cotton Mills (S. C.).....	150	...
Lockhart Mills (S. C.).....	103½	...
Louise Mills (N. C.).....	101	...
Mayo Mills (N. C.).....	140	...
McColl Mfg. Co. (S. C.).....	108	...
Monaghan Mills (S. C.).....	95	97
Newberry Cotton Mills (S. C.).....	115	...
Norris Cotton Mills (S. C.).....	110	...
Odell Mfg. Co. (N. C.).....	95	102
Orr Cotton Mills (S. C.).....	100½	...
Pacolet Mfg. Co. (S. C.).....	185	200
Pelzer Mfg. Co. (S. C.).....	165	...
Piedmont Mfg. Co. (S. C.).....	160	172½
Poe, F. W. Mfg. Co. (S. C.).....	130	133
Richland Cotton Mills (S. C.).....	96	101
Richland Cotton Mills (S. C.) Pfd.....	101	...
Sibley Mfg. Co. (Ga.).....	65	70
Southern Cotton Mills (N. C.).....	90	...
Spartan Mills (S. C.).....	130	...
Trion Mfg. Co. (Ga.).....	125	140
Tucapau Mills (S. C.).....	130	...
Union Cotton Mills (S. C.).....	148	...
Union Cotton Mills (S. C.) Pfd.....	100	102
Victor Mfg. Co. (S. C.).....	115	...
Warren Mfg. Co. (S. C.).....	95	98
Washington Mills (Va.) Pfd.....	104	...
Washington Mills (Va.) Com.....	6	105
Whitney Mfg. Co. (S. C.).....	110	...
Wilmington Cot. Mills (N. C.) Pfd.....	100	...
Wiscasset Mills (N. C.).....	110	125

BANK LOANS INCREASE.

Large Gains Shown by Reports to the Comptroller.

The reports of the condition of the national banks for the entire country under date of July 16 show large gains as compared with last July. A year ago the comptroller of the currency issued a call for a statement of condition on July 15, 1901, so that a fair comparison can be made. The two reports show that in the year that has elapsed there has been an increase in loans amounting to \$264,944,255. In the same period the cash held by the banks has increased \$33,603,093 and the individual deposits show an increase of \$157,038,343.

The following table presents the conditions of the national banks on the dates named:

	July 16, 1902.	July 15, 1901.
Loans and discounts.....	\$3,221,850,631	\$2,956,906,376
Due other national banks.....	636,954,587	645,038,393
Due State banks and bankers.....	310,146,963	275,928,820
Due trust companies and savings banks.....	271,965,850	250,222,981
Due reserve agents.....	33,842,229	35,626,197
Individual deposits.....	3,098,875,772	2,941,837,429
United States deposits.....	118,238,798	93,825,078
Deposits of disbursing officer.....	5,727,327	5,247,189
Specie.....	404,763,968	371,985,513
Legal-tenders.....	164,854,292	164,929,624
Total cash.....	569,618,260	536,015,167

The reports from which Comptroller Ridgely compiles his summary comprise statements from 4423 national banks. It will be noticed that the increase in loans, amounting to \$264,944,255 for the year, represents an increase of more than 10 per cent., while the deposits do not show the same ratio of increase. Attention is also directed to the fact that there has been a marked decrease in deposits of national banks in other national banks.

At the same time, the State banks and trust companies show an increase in this particular line. The policy of Secretary Shaw of the Treasury Department in increasing the government deposits in the nation's banks is beginning to bear substantial fruit, as in the table presented it will be noted that there has been an increase of \$24,413,720 in United States deposits.

Joint Convention of Bankers.

Plans have been made for the annual convention of the Maryland Bankers' Association, to be held Friday and Saturday, September 19 and 20, at the Blue Mountain House, Maryland, and the District of Columbia Bankers' Association has accepted an invitation to meet the Maryland Association in joint convention. The delegates are to assemble on Thursday night, and a smoker will be held on Thursday night. The convention will open Friday morning at 10 o'clock. An afternoon session will also be held on Friday, when officers will be elected for the ensuing

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year, the morning having been devoted to the delivery of addresses and to the transaction of other business that may come before the convention. On Friday night a banquet will be held. Saturday morning a trip will be made to Gettysburg. Saturday afternoon will be devoted to trips around the mountain resorts, and on Saturday night a ball will be tendered to the ladies accompanying the delegates.

The officers of the association are: President, Charles C. Homer of Baltimore; secretary, Lawrence B. Kemp, also of Baltimore; chairman of the committee on administration, Robert Shriver of Cumberland.

Raleigh, N. C., reports a steady increase in the taxable basis and a large increase in the number of persons listing their incomes for taxation. Last year seventy-three incomes were listed, but this year 188 are already on the books.

[For Additional Financial News, See Pages 28 and 29.]

7a, See